JFMM ACN 02-04
SURFACE SHIP/AIRCRAFT CARRIER MODERNIZATION PROGRAM (SHIPMAIN)

REFERENCES.

(a) OPNAVINST 4720.2 -Fleet Modernization Program (FMP) Policy
(b) NAVSEAINST SL720-AA-MAN-010/020- Fleet Modernization Management and Operations Manual
(c) COMFLTFORCOM 012057ZJUN2004
(d) COMFLTFORCOM 032037ZMAY2004
(e) CLF/CPFINST 4720.3 of 27 APR 2000 – Management of Afloat Combat Systems and C4I Installations and Improvements
(f) COMFLTFORCOM 232143ZJAN03
(g) COMNAVNETWARCOM 051511ZSEP03
(h) DOD Directive 5000.1 - Defense Acquisition System
(i) DODINST 5000.2 - Operation of the Defense Acquisition System

LISTING OF APPENDICES.

A Modernization Plan Flowchart
B Ship Change Document Template
C Technical Assessment Flowchart
D Cost Benefit Analyses Flowchart
E Alteration Figure of Merit Flowchart
F Voting Database Flowchart
G Ship Modernization Milestones; Aircraft Carrier Modernization Milestones

02-04.1 Scope. This chapter is applicable to all Surface/Carrier Force ships and shore activities involved in ship modernization. The provisions of this chapter have been developed in collaboration with Naval Operations (OPNAV). Where there are conflicts with references (a) and (b), this chapter shall take precedence until such time as OPNAV implementing directives can be modified/issued. References (c) through (i) govern the management of afloat Combat System (CS) and C4I installations and improvements (C5IMP), and Initial Adversary Vulnerability Assessment (IAVA) policies and remain in effect as written. A combined SHIPMAIN and C5IMP process is currently in development and will be addressed in future revisions to this chapter and other NAVY Directives. Type Commander (TYCOM) Maintenance Directorates shall be the lead for ensuring implementation. Ships will continue the current practice of forwarding change requests to the Immediate Superior In Command (ISIC), who will forward the change request to the respective TYCOM for entry into the Navy Data Environment (NDE). Only alterations entered in NDE will be considered for inclusion in Modernization Programs.

02-04.2. Purpose. The purpose of this chapter is to document the Surface Ship/Aircraft Carrier Modernization Program, which emphasizes early decisions under the control of Commander Fleet Forces Command (CFFC), Commander Pacific Fleet (CPF), and Commander Naval Network Warfare Commander (CNNWC), and expands on the decision process for deciding which alterations and modifications will be developed, procured, certified and installed on all surface ships and aircraft carriers. The objective is to assure that fleet modernization investments address the fleet's greatest concerns and are integrated and prioritized across Strike Groups, ships, systems and warfare areas. The process directly involves Navy leadership at all levels (Fleet, OPNAV, Force TYCOMs, Systems Commands (SYSCOM) and Program Executive Offices (PEO)) in the programming, planning and installation of modernization in a consistent and disciplined manner.

02-04.3. Background. The program is implemented as part of SHIPMAIN to modify the FMP due to Fleet concerns with the FMP which include alterations developed and hardware procured but never installed, significant changes to availability work packages after authorization letter issuance, and alteration installation problems caused by failure to satisfy planning milestones. While these issues are often times driven by overall funding instability in Navy budgets and changing priorities, the associated costs consume modernization funding which minimizes the ability to modernize ships to meet Fleet requirements. The current FMP, documented in reference (b), provides a structure for the orderly identification, approval, design, planning, programming, budgeting, installation, life cycle support and configuration control of military, technical, and survivability improvements to all ships of the active and reserve fleets. SHIPMAIN was developed to concentrate on the early decision process regarding which alterations are to be accomplished. This process provides timely Fleet involvement and the assurance that changes are driven by current fleet requirements. This chapter also provides overall prioritization in the alterations to be accomplished and discipline and accountability in the adherence to FMP processes.

02-04.4. Process. Appendix A provides a flowchart of the entitled modernization process decision and prioritization.

02-04.4.1 Key Elements. Key elements of the Ship/Carrier Modernization Program are:

a. A single process to identify, evaluate and approve modifications to all ships and ship's systems. The process is based on approved business rules and is owned by the Force TYCOMs Commander Naval Surface Forces/Commander Naval Air Forces (CNSF/CNAF). The process operates in concert with Acquisition Program processes of reference (c).

b. Consolidation of all alterations into two types:

(1) Fleet alterations funded by the Fleet.

(2) Program alterations funded by the SYSCOMs/PEOs

c. A four-phase process (Preliminary Analysis, Concept Design, Design Development, Ship Integration) supported by Decision Points at the end of Phases I-III. Senior Fleet/OPNAV personnel comprise the Decision Boards identified in paragraph 02-04.6 of this chapter. Provisions exist to combine Phases II and III for less complex changes as delineated in paragraph 02-04.4.8 of this chapter. Any major changes encountered during Ship Intergration will require reporting back to Decision Point 3 for approval to continue the Ship Change.

d. A single NDE database, maintained by Naval Sea Systems Command (NAVSEA) 04. The Ship Change Document (SCD), which replaces the Justification Change Form, Ship Alteration Record, in service Engineering Change Proposal (ECP) and all other alteration documents used in the FMP, will be entered and tracked in NDE from inception through installation in the last applicable ship. Appendix B illustrates the SCD template. Only SCDs entered in NDE will be considered for inclusion in modernization plans for specific hulls.

e. Involvement of Fleet, OPNAV, TYCOMs, SYSCOMS and PEOs in the decision making process, utilizing three boards of stakeholders at the O-6, one and two star Admiral, and three star Admiral level. Voting members of the boards represent appropriate Fleet and OPNAV organizations. SYSCOM and PEO representation is included to validate the readiness of the alteration to proceed to the next step. Paragraph 02-04.5.2 of this chapter addresses the business rules associated with the voting process. Depending on cost and impact thresholds, decisions are made by one of the three boards. An electronic voting capability (eVote), embedded in NDE, will be used on a continuing basis to facilitate timely action by the boards, and minimize the need for boards to formally convene. NAVSEA 04 will ensure data is available to voting members 10 to 14 days prior to required voting. As noted on the SHIPMAIN Modernization Flow Chart, Appendix A of this chapter, Technical Assessments are conducted at three points in the process, and in conjunction with the Alteration Figure of Merit (AFOM) and Cost Benefit Analysis (CBA) blocks, are assembled in a Recommended Change Package (RCP) which provide the basis for decisions made by the O-6, 1/2 Star and 3 Star Boards.

(1) The O-6 level board approves Fleet alterations except in cases where the scope and complexity dictate referral to a higher level board, makes the majority of decisions involving the lower cost and lesser impact Program alterations, and provides recommendations for the higher level boards.

(2) The one and two star board validates the O-6 board decisions and provides Fleet/OPNAV/claimant recommendations to Acquisition Category (ACAT) III and ACAT IV and below program milestone decision authorities.

(3) The three star board sets overall priorities, makes the decisions involving the higher cost and higher impact alterations, validates one and two star board decisions, provides Fleet/OPNAV/claimant recommendations to ACAT I and ACAT II program milestone decision authorities, and approves the Ship/Carrier Modernization Pre-Overseas Movement (POM) Submission (Capability Plan).

02-04.4.2 Decision Points. There are three main decision points exercised by the review boards (Steps 60, 140 and 220 of Appendix A); and all three are supported by technical assessments, cost benefit analyses and figure of merit assessment reviews.

a. Decision Point 1: The purpose of Decision Point 1 is to approve the entry of the concept design and to include the proposed change in the Modernization Plan. Approval at this point constitutes Resource Sponsor commitment to fully fund the change in the POM. It is recognized that follow-on budget decisions beyond the control of the Resource Sponsor may require relief from that commitment, however, the Resource Sponsor will then advise the Voting Boards for consideration of the change in future budgets. Some programs/capabilities may not be defined to the alteration level based on the need for further technical definition. In those cases, the program/capability will be submitted as a single SCD for consideration at Decision Point 1. In Phases II and III, the program/capability will be defined in multiple alterations as required.

b. Decision Point 2: The purpose of Decision Point 2 is to validate/update the Modernization Plan and to proceed with design development, with Resource Sponsor confirmation that funds exist in the budget to fully execute the Ship Change.

c. Decision Point 3: The purpose of Decision Point 3 is to validate/update the Modernization Plan and to proceed with material procurement and scheduling installations with Resource Sponsor confirmation that funds exist in the budget to fully execute the Ship Change.

02-04.4.3 Ship Change Document. The principal document used in the Technical Assessments is the SCD which remains with an alteration throughout its development. The SCD replaces the Justification Cost Form (JCF), In-service ECP, the Ship Alteration Record and all other alteration documents (e.g. FC, O/A) which were used in the former FMP. The SCD is prepared by any activity and must meet specific minimum requirements addressed in paragraph 02-04.5 of this chapter, in order to proceed beyond block 10. After the SCD is prepared it is forwarded to an authorized submitting activity for entry into NDE. Authorized submitting activities are :

a. TYCOMs.

b. OPNAV.

c. PEOs.

d. Participating Managers (PARM).

e. Life Cycle Managers.

f. Commander Fleet Forces Command.

02-04.4.3.1 Phase I. The Phase I steps consist of:

a. The initiator shall provide data for all SCD Phase I fields at a minimum prior to submission to the submitter.

b. A preliminary tracking number shall be automatically assigned by the system (NDE).

c. The initiator and the submitter shall have the ability to review the draft SCD at any time in the preparation process.

d. This form shall be able to be viewed at any point in the process once submitted.

e. Minimum header data required uniquely defining the Configuration Change (functional definition, class affectivity, functional areas).

f. Fleet requirement, description of change, and impact to the Fleet if not accomplished.

g. The submitter will either approve the change and put into NDE officially or kill the change. Entering an SCD at this point establishes that the SCD has officially entered the SHIPMAIN Entitled Process.

h. The submitter will ensure there are no duplicate SCDs.

i. The submitter shall be able to expedite Alterations that are considered to be critical by Fleet by setting an “Expedite” flag in SCD. Expedited SCDs are considered first in any process work queue.

j. The submitter shall be able to identify previously shelved alterations and resubmit to the process using previously assigned SCD identification via TYCOM or OPNAV Sponsor.

k. The expedite alert box should be checked “yes” when operational readiness (i.e., correction of a C4 Casualty Report) or safety to personnel is effected.

l. All authorized SCDs shall be assigned a sequential Ship Change Number by the system (NDE).

NOTE: THE PROCESS ENABLES LESS COMPLEX CHANGES TO COMBINE PHASES II AND III, AS DETERMINED IN THE INITIAL TECHNICAL ASSESSMENT.

02-04.4.3.2 Phase II. The Phase II steps consist of:

a. The Submitter receives approval of SCD Phase I and notification to complete SCD Phase II or IIa, if approved by Voting Board, form.

b. The submitter will utilize internal processes to complete preliminary engineering and provide a draft SCD Phase II to the Change Manager in the respective Ship Program Manager Office.

02-04.4.3.3 Phase III. The Phase III steps consist of:

a. Submitter receives approved SCD Phase II.

b. The submitter will utilize internal processes to complete engineering and design development and provide a draft SCD Phase II (a) or III.

02-04.4.4 Technical Assessment Teams. Technical Assessment Teams (TAT) are assigned at NAVSEA and will be made up of subject matter technical experts related to the scope of the SCD.

02-04.4.4.1 Technical Assessments. Technical Assessments are performed at three separate stages in the process to support decisions to complete preliminary engineering, design development and detail specifications.

02-04.4.4.2 Technical Assessment Business Rules. Appendix C reflects the Technical Assessment flowchart.

02-04.4.4.3 Phase I Technical Assessment Rules. The following Phase I Technical Assessment Business Rules apply:

a. Ship's Program Manager (SPM) cannot send a change idea to history.

b. TAT review process will take no longer then 5 days.

c. Any negative recommendation must include a justification.

d. Due to limited engineering requirements and limited impacts to existing equipments and the ships, some changes may be permitted to have Phase II and Phase III combined. In order to determine if there is sufficient reason to combine these two phases for a particular change, the TAT must consider the Scope (SCD Phase I, Item 3.a) of the change.

02-04.4.4.4 Technical Assessment Teams. TATs will be allowed to change fields to correct data. If any information is changed a record of the change will be kept and the submitting Point of Contact notified for concurrence.

02-04.4.4.5 Changes. Identify changes that may supersede or be redundant with an existing change. Should the SPM require additional clarification, endorsement will not be forwarded prior to attempting issue resolution via TAT Lead. Unresolved issues will be noted in the Technical review comments and forwarded.

02-04.4.4.6 Phase II Technical Assessment Rules. Should the SPM require additional clarification, endorsement will not be forwarded prior to attempting issue resolution via TAT Lead. Unresolved issues will be noted in the Technical Assessment comments and forwarded. TAT will take no longer than 45 days to complete.

02-04.4.4.7 Phase II(a) Update Technical Assessment. In this phase, complete technical data will be available for review in the draft Phase II(a) SCD. Phase II(a) will combine Phases II and III in order to streamline the process. The same basic tenets of the process described for Phases II and III will apply. The TAT will complete their review within 60 days.

02-04.4.4.8 Phase III Technical Assessment Rules. In this phase, complete technical data will be available for review in the draft Phase III SCD, but the basic tenets of the process described for Phases I and II will apply. TAT will complete their review in this phase in no more than 60 days.

02-04.4.5 Cost Benefit Analyses. A CBA is conducted at step 40 of the process, and then updated at steps 120 and 200, to support Modernization Plan decisions by the three established review boards. Appendix D reflects the Cost Benefit Analysis Flowchart. It is imperative that sound cost estimates be developed to make these analyses valid. The CBAs, the Technical Assessments and AFOM assignments together form the RCP which are provided to the respective review boards to support board decisions on proposed shipboard changes. These analyses are accomplished by Independent Cost Review (ICR) Teams under the direction of NAVSEA 017. All cost data to support the CBA process is derived from the SCD, initially submitted by the activity proposing the change, and then updated throughout the process.

02-04.4.5.1 Phase I Preliminary Analysis Business Rules. In this phase, the purpose of the ICR Team is to review cost data entered in the SCD for completeness and reasonableness to support Decision Point I. The input to the CBA process is an affirmative designation by the Technical Analysis Team. In this phase, the ICR Team is expecting high-level cost information (e.g. Concept Development Cost, Preliminary Engineering Cost, Design Development Cost, Procurement Cost and Installation Cost). This cost data will be provided by responsible PARMs and SPMs as direct inputs into the SCD resident in NDE. NDE maps this data into a Cost Reduction and Effectiveness Improvement (CREI) document designated as the CREI Template which automatically calculates cost metrics such as Return on Investment (ROI), Net Present Value (NPV) and Payback Period. When the calculations have been made by the CREI Template, a notification is electronically forwarded to Subject Matter Expert (SME) members of the ICR Team. The cost data fields in NDE will be locked precluding uncontrolled changes and can only be unlocked by a member of the ICR Team. If the ICR Team has questions about the data, they will be provided back to the data source through a "feedback" loop managed by NAVSEA 017. The feedback process will only be exercised one time (if necessary), and will then be forwarded to the Decision Board for their review and decision. The ICR Team will not alter cost data; but will use the feedback loop as the conduit for questioning submitted cost data. Should the source of the cost data determine a change to submitted cost information is warranted based on ICR Team questions, he/she will enter the corrected data in NDE after consultation with the NAVSEA 017 Area Coordinator. The Area Coordinator will obtain concurrence from respective ICR Team members and unlock applicable cost data fields. The source of the cost data will have two (2) working days to make the change to appropriate fields, at which time the fields will again lock and the data passed to the RCP and review by the appropriate board. In those instances where the source of the cost data does not agree with changes proposed by the ICR Team, the unaltered data will be forwarded for inclusion in the RCP as well as the ICR Team comments.

02-04.4.5.2 Phase II Concept Design Cost Benefit Analysis Update. In this phase, the ICR Team is looking for more fidelity in the cost data provided to support Decision Point 2. The basic CBA Process in this phase mirrors Phase I, with the following exceptions/additions:

a. If the Program Manager (PM) experiences cost growth of greater than 10% in the total program budget, the PM shall notify the appropriate Sponsor (Fleet or OPNAV). The Sponsor may decide to address this issue with the Decision Board.

b. In the year of execution, if a cost shortfall identified is within the Program Managers ability to cover within his program, the Sponsor shall be notified if there is any change to the Modernization Plan.

c. If the total cost estimate of an alteration exceeds the appropriate threshold for the respective phase (i.e. 40% Phase I, 25% Phase II, 15% Phase III), the PM shall notify the appropriate Sponsor (Fleet or OPNAV). At that point, the Sponsor may decide to address the issue with the Decision Board.

02-04.4.5.3 Phase III Design Development Cost Benefit Analysis Update. In this phase, the ICR Team is expecting detailed cost data to be available to support Decision Point 3, however, the basic CBA Process mirrors that conducted in Phases I and II.

02-04.4.6 Alteration Figure of Merit. The AFOM is used in concert with the Technical Assessment and the CBA to form the RCP, which is provided to and forms the basis for the Board Decisions. The AFOM is initially calculated prior to Decision Point 1, and then updated to support Decision Points 2 and 3. The AFOM is defined as the quantitative "War Fighting or Readiness Benefit" assigned to each proposed alteration. Appendix E reflects the AFOM Flowchart. Fleet and OPNAV members of the 3-Star Board weight this structure annually, on or about October of the fiscal year, using Fleet Forces Command guidance which is based on numbered Fleet and TYCOM Integrated War Fighting and Readiness priorities and additional inputs from the Chief of Naval Operations (CNO) Campaign Analysis and Sea Trials processes. There are two components to the process of assigning AFOMs to each SCD:

a. The annual establishing of weights based on Fleet priorities.

b. The continuous action by respective TYCOMs to assign index values to standardized rating scales that address:

(1) Suitability (Reliability, Maintainability, Operational Availability, Supportability, Safety)

(2) Quality of Service/Quality of Life (QOS/QOL)

(3) Capability

Separate from this annual event, TYCOMs continue to review and assign index values to the previously noted standard rating scales for each change as part of the throughput of SCDs. CNSF/CNAF will rate each proposed alteration using established rating scales and Fleet Staff SME recommendations to calculate the AFOM through a Flag-weighted algorithm that resides in NDE. The TYCOM Rating Scale Index Value assignments are entered in NDE and calculated to provide an overall AFOM and nested AFOMs that articulate the change benefits of Capability, Suitability and QOS/QOL to the SHIPMAIN Decision Board members.

02-04.4.7 Annual Assignment of Weights. The annual assignment of weights is a key component of the AFOM assignment and ensures the AFOM process remains current with Fleet/Navy priorities. The weights are the foundation of the algorithm in NDE which calculates the AFOM assignment for each alteration.

a. The SHIPMAIN 3 Star Board shall annually determine the numerical weights of the Naval Power 21-based AFOM Benefit Structure using the Merit Assessment Questionnaire. The determination of AFOM Benefit weights will be executed using a pair-wise mathematical analysis tool. Each SHIPMAIN Fleet 3 Star Board member indicates his/her preferences using the formatted pair-wise questionnaire provided in the Merit Assessment Questionnaire.

b. Respective TYCOMs will continue to review and assign initial AFOMs as dictated by the throughput of SCDs, using SMEs from activities in the area associated with each SCD. Each SCD that successfully completes the Technical Assessment block in each phase is mapped by the submitter in NDE by Naval Capability and routed to cognizant TYCOMs. The TYCOMs will canvass appropriate SMEs for input, providing relevant TYCOM-generated questions to the SME to assist in their review. Using these questions, the TYCOM SME representative will review the information listed in the SCD and will provide inputs back to the TYCOM by recommending the Index values associated with the AFOM Benefit Structure Rating Scales discussed earlier. The TYCOM will review inputs and enter the final Index value in NDE. NDE will aggregate TYCOM inputs and automatically calculate or recalculate the AFOM based on the algorithm which reflects the weights described above. This process is replicated in each of the first three phases (Preliminary Analysis, Concept Design, Design Development) to support the three decision points. An overall AFOM score and a breakout of AFOM by Capability, Suitability, QOS/QOL and each of the four Naval Power 21 Capabilities (Sea Base, Sea Strike, Sea Shield, ForceNet) will be included on the RCP.

02-04.4.8 Combining of Phases. Guidelines for combining of Phases II and III:

a. If the Scope is Internal Equipment Modification, all of the following criteria must be met:

(1) The change can be accomplished without changing an interface external to the equipment or system.

(2) The change is made within the equipment or system.

(3) The change does not negatively impact Battle Force/Strike Force Interoperability.

(4) The change does not impact shipboard distributive systems (i.e. water, ventilation, electrical, power, etc.), Ship Selected Records or interfacing equipment or systems, compartmental arrangement records or Damage Control records.

b. If the scope is Ship Modification all of the following criteria must be met:

(1) The change does not negatively impact Battle Force/Strike Force Interoperability.

(2) The change does not impact ship's stability records (weight & moment).

(3) The change does not impact or alter the 3-dimensional footprint of the equipment being replaced.

(4) The change does not impact shipboard distributive systems (i.e. water, ventilation, electrical, power, etc.), Ship Selected Records or interfacing equipment or systems, compartmental arrangement records, or Damage Control records.

(5) The change does not impact manning levels.

c. If all of the guidelines listed above are met, the technical assessment team may recommend Phases II and III be combined.

d. If the Phase I 0-6 Board determines Phases II and III can be combined, then both Phases II and III of the SCD must be completed before going to the Decision Point 3 0-6 Board.

e. Duration of Alteration is designated as a Non Permanent Installation (Previously termed Temporary Alteration). **These changes will include prototypes, proof-ins and current TEMPALTS** . This type of change will adhere to the following guidance:

(1) A non permanent install will start in Phase I and must be approved at Decision Point 1. After Decision Point 1, the change will proceed to SCD Phase II for concept design.

(2) During concept design a Ship Change Data Package, including Plan of Action and Milestones, will be prepared and the proposal sent through the review process to Decision Point 2 for approval to install.

(3) After approval at Decision Point 2 the change will be installed during Phase III. At the completion of the authorized install period the change will either be:

(a) Removed and all documentation forwarded to the review teams and Decision Point 3 to inform all parties of the results.

(b) Make install permanent by forwarding results and Phase III SCD reflecting the need to make the change permanent and to install on other platforms.

(4) Installation will be onboard for **pre-specified amount of time not to exceed** one deployment cycle or one (1) year.

(5) Sponsoring Activity may utilize internal process to complete preliminary engineering and provide a draft Phase III SCD to the SPM Change Manager, or the SPM may task the Planning Yard to develop a Phase III SCD.

(6) Sponsoring Activity shall provide required documentation (e.g ICDs) to support completion of the Phase III SCD.

(7) Plan of Action and Milestones required for equipment development.

d. If all of the guidelines listed above are met, the technical assessment team may recommend Phases II and III be combined.

e. If the Phase I 0-6 Board determines Phases II and III can be combined, Phases II and IIa of the SCD must be completed before going to the Decision Point 3 0-6 Board.

02-04.5 Voting Rules.

02-04.5.1 Voting Database Rules. The principal document in the voting process is the RCP. The RCP is prepared electronically in NDE, and presents information from the Technical Assessment, AFOM, and CBA. While the RCP provides summary information, the capability exists to drill down to view more detail from the Technical Assessment/AFOM/CBA. The three Decision Boards mentioned in paragraph 02-04.6 of this chapter will be in place to approve RCPs and authorize SCDs to proceed to the next phase of the process. NDE will be the single authoritative database for Ship Modernization and will support the entire process, from alteration inception through installation of the alteration. NDE will include an electronic voting capability (eVote) to enable Decision Boards to convene virtually and on a continuous basis.

02-04.5.2 Initiate Ship Change Document Business Rules. The SCD will initially capture the basic idea and associated cost and mission capability information, but will be updated with more detailed information as the change matures through the process. The initiator of the change will prepare the SCD and forward to the organization, in their chain of command, authorized to submit the SCD into NDE (e.g. Type Commanders, OPNAV, PEO, PARM/LCM). The appropriate technical authority will be assigned at NAVSEA and will be responsible for providing updated data in the SCD to support the process through final disposition of the change.

02-04.6 Decision Boards. The three decision points in the process (i.e. Authorize and Fund Preliminary Engineering, Design Development and Procurement/Installation) are accomplished through the three Decision Boards (O-6, 1/2 Star, 3 Star). These decisions feed the POM/Budget process to create and sustain a fully funded ship Modernization Plan (MP). A positive decision at Decision Point 1 constitutes Resource Sponsor commitment to fund the alteration through development and final installation. Appendix F reflects the Decision Point Flowchart. For each alteration the Technical Assessment, AFOM Assignment and Cost Benefit Analysis are completed prior to each decision, and aggregated in a RCP to be considered by the voting boards. The RCP will be available on a read only basis in NDE for review by SPM/PM/PARM personnel prior to consideration by the boards. NDE will provide for electronic workflow such that SCD processing up to and including voting by board members can be done virtually. While the boards will operate in a hierarchical mode where decisions made at a lower level board will be validated by the senior board, the following thresholds are established for approval authority:

a. O-6 Board- < $50M Total Cost

b. 1/2 Star Board $50-200M Total Cost

c. 3 Star Board > $200M Total Cost

02-04.6.1 Board Specific Rules. The following specific rules apply to each Board:

a. O-6 Review Board

(1) Shall meet continuously on a virtual basis and consider all RCPs. For items that are outside their fiscal threshold ($50M total program value) they make recommendations to higher boards.

(2) All members have the opportunity to vote on all RCPs.

(3) Concur or non-concur with recommendation to expedite.

(4) Concur or non-concur with recommendation to go to Phase IIA.

(5) Voting process will be achieved within the following timelines:

(a) 5 working days to vote.

(b) 5 working days to adjudicate funding issues (associated with Funding Concurrence-resource identification). If resource sponsor fails to provide acceptable trade-off, the board has the authority to approve in accordance with SCD.

b. 1-2 Star Review Board

(1) Will meet monthly to review Modernization Plan and to consider forwarded RCPs that fall within their monetary threshold (>$50M and <$200M total program cost).

(2) Concur or non-concur with recommendation to expedite.

(3) Concur or non-concur with recommendation to go to Phase IIA.

(4) Voting process will be achieved within the following timelines:

(a) 20 working days to vote.

(b) 5 working days to adjudicate funding issues (associated with Funding Concurrence-resource identification). If resource sponsor fails to provide acceptable trade-offs, the board has the authority to approve in accordance with SCD.

c. 3 Star Review Board

(1) Will meet quarterly to review Modernization Plan and to consider forwarded RCPs that fall within their monetary threshold (above $200M total program costs).

(a) Approve/disapprove 1-2 Star Board recommendations.

(b) Voting process will be achieved within following timelines:

1 60 days to vote.

2 5 days to adjudicate funding issues (associated with Funding Concurrence-resource identification). If resource sponsor fails to provide acceptable trade-offs, the Board has the authority to approve in accordance with SCD.

(2) Submits annual Modernization Plan to OPNAV N7.

02-04.7 Approval for Fleet Alterations. Approval for Fleet Alterations shall be via official TYCOM Letter of Authorization at A-12, and entered into NDE. Alterations shall not be authorized for installation unless included in NDE. The TYCOM shall establish Fleet Alteration funding policies for each fiscal year by defining a "fleet modernization control" (i.e. a specified percent of the maintenance budget set aside for Fleet Alteration modernization). Resource sponsor (OPNAV N43) approval to fund alterations that result in exceeding the fleet modernization control will require offsets to be identified to keep the fleet modernization control at the specified level/percentage. If offsets cannot be identified, it will be the responsibility of the TYCOM to increase the fleet modernization control within the constraints of the maintenance budget (i.e. increases to the fleet modernization control will be offset by decreasing the amount of the maintenance budget allotted for maintenance).

02-04.8 Execution Year Changes to Modernization Plans. It is expected this process will minimize changes during the execution year. Operational priorities may require some changes after the approved Modernization Plan has been submitted with the annual President's budget submission to Congress. Execution year changes to the approved Modernization Plan will be limited and only as approved by the Voting Boards in accordance with fiscal statutes and regulations.

02-04.9 Metrics. A goal of the Ship Modernization Program is to instill discipline in the process to ensure stability from alteration inception through final installation, minimizing the deficiencies noted above. To support this stability a number of business rules have been established within this chapter.

02-04.9.1 Evaluation. The five selected metrics below will be used to evaluate the Ship Modernization Program processes.

02-04.9.1.1 Process Effectiveness. For all alteration installation completions, determine if it was accomplished in the same fiscal year as called for in the Modernization Plan developed during the most recent POM cycle. (Example: The Modernization Plan used as the baseline for this metric will be set by POM06 for Fiscal Year (FY)06 and FY07 and set by POM08 for FY08 and FY09.) Metric data will be collected and analyzed monthly with Fleet and Program alterations plotted separately. This same data will be tallied by SYSCOM on an annual basis.

CALCULATION:

1. $\frac{\text{Total \# of Fleet Alterations completed as per the Modernization Plan schedule}}{\text{Total \# of Fleet Alterations completed}}$

2. $\frac{\text{Total \# of Program Alterations completed as per the Modernization Plan schedule}}{\text{Total \# of Program Alterations completed}}$

a. Source Data and Reporting Frequency for Measurement. All data used for this metric shall come from NDE-NM. A separate monthly tally of Fleet and Program alterations installed in accordance with the Modernization Plan will be plotted to provide a trend on the "effectiveness" of the process.

b. Basis for Baseline: Since this metric is based solely on the entitled process, the baseline will be established after 12 months of data collection.

c. Required NDE Fields:

(1) Alteration Identifier

(2) Alteration Type (Fleet or Program)

(3) Installation FY from most recent POM cycle

(4) Actual completion FY

02-04.9.1.2 Process Efficiency. The process efficiency is the percentage of planned installation dollars that were actually expensed. Comparison of the planned installation dollars to the actual cost of installations performed. For all alteration installation completions, determine if it was accomplished for the estimated cost as provided in the Modernization Plan developed during the most recent POM cycle. (Example: The Modernization Plan used as the baseline for this metric will be set by POM06 for FY06 and FY07 and set by POM08 for FY08 and FY09.) Metric data will be collected and analyzed monthly with Fleet and Program alterations plotted separately.

CALCULATION:

1. $\frac{\text{Total estimated cost of Fleet Alterations completed as per the Modernization Plan schedule}}{\text{Total actual cost of completed Fleet Alterations}}$

2. $\frac{\text{Total estimated cost of Program Alterations completed per the Modernization Plan schedule}}{\text{Total actual cost of completed Program Alterations}}$

a. Source Data and Reporting Frequency for Measurement. All data used for this metric shall come from NDE-NM. A separate monthly tally of Fleet and Program alterations installed in accordance with the Modernization Plan will be plotted to provide a trend.

Source Data: NDE-NM

b. Basis for Baseline. Since this metric is based solely on the entitled process, the baseline will be established after 12 months of data collection.

c. Required NDE Fields:

(1) Alteration Identifier.

(2) Alteration Type (Fleet or Program).

(3) Installation cost estimate from most recent POM cycle.

(4) Actual installation completion cost.

02-04.9.1.3 First Pass Yield. For all SCDs, keep a count of how many are being reviewed for the first time at each major decision point and of these how many are "approved". "Approved" are those that are not "killed" or sent back for rework. Metric data will be collected and analyzed monthly and tallied by SYSCOM on an annual basis

CALCULATION:

a. First Pass Yield (FPY) 1 (Decision Point 1 - "Authorize Fund Preliminary Engineering")

$$\frac{\text{Total \# of SCDs being reviewed for the first time and approved at Decision Point 1}}{\text{Total \# of SCDs being reviewed for the first time at Decision Point 1}}$$

b. FPY 2 (Decision Point 2 - "Authorize Fund Design Development")

$$\frac{\text{Total \# of SCDs being reviewed for the first time and approved at Decision Point 2}}{\text{Total \# of SCDs being reviewed for the first time at Decision Point 2}}$$

c. FPY 3 (Decision Point 3 - "Fund Procurement & Installation")

Total # of SCDs being reviewed for the first time and approved at Decision Point 3
Total # of SCDs being reviewed for the first time at Decision Point 3

d. FPY 4 ("Ship Change (SC) Ready to Install")

Total # of SCDs being reviewed for the first time and Ready to Install (Block 270)
Total # of SCDs being reviewed for the first time at "SC ready to install"

02-04.9.1.4 Productivity. For all SCDs, keep a count of how many are approved at each major decision point. Metric data will be collected and analyzed monthly, and tallied by SYSCOM on an annual basis.

CALCULATION:

1. Total number of alterations approved at Decision Point 1 "Authorize Fund Preliminary Engineering"

2. Total number of alterations approved at Decision Point 2 "Authorize Fund Design Development"

3. Total number of alterations approved at Decision Point 3 "Fund Procurement & Installation"

4. Total number of alterations approved at "SC ready to install" point

a. Source Data and Reporting Frequency for Measurement. All data used for this metric shall come from NDE-NM. Each SCD is assigned a unique identification number in NDE on submission. A separate monthly tally of alterations approved at each point will be plotted to provide a trend on the "productivity" of the process.

b. Basis for Baseline. Since this metric is based solely on the entitled process, the baseline will be established after 12 months of data collection.

c. Required NDE Fields:

(1) SCD identification number.

(2) Approval status of SCD at each of the decision points Status will be blank for a specific decision point if SCD has not yet reached that block in the process.

(3) Date that decision at each point was reached. Date will be blank for a specific decision point if the SCDs approval status at that point is blank.

02-04.9.1.5 Sunk Cost. For all SCDs that are entered into NDE under the entitled process, identify and measure the total resources (dollars) invested in SCDs that are subsequently voted to be "Inactive and Killed" at various process decision points. Metric data will be collected and analyzed monthly, and tallied by type of appropriation on an annual basis.

CALCULATION: For all SCDs that are entered into NDE

a. Total of actual dollars expended in all FY for an SCD "killed" at Decision Point 1 (Authorize Preliminary Engineering).

(1) Capture actual expenditures as recorded in NDE as part of the Cost Benefit Analysis prepared for Decision Point 1.

(2) Metric may be further refined for phase of development and type appropriation per the cost categories recorded in the CBA as follows:

Infrastructure investment – APPN/PE(b) Preliminary Engineering – APPN/PE

b. Total of actual dollars expended in all FY for an SCD "killed" at Decision Point 2 (Authorize Design Development).

(1) Capture actual expenditures as recorded in NDE as part of the CBA prepared for Decision Point 2.

(2) Metric may be further refined for phase of development and type appropriation per the cost categories recorded in the CBA as follows:

(a) Infrastructure investment – APPN/PE

(b) Preliminary Engineering – APPN/PE

c. Total of actual dollars expended in all FY for an SCD "killed" at Decision Point 3 (Authorize Procurement and Installation).

(1) Capture actual expenditures as recorded in NDE as part of the CBA prepared for Decision Point 3.

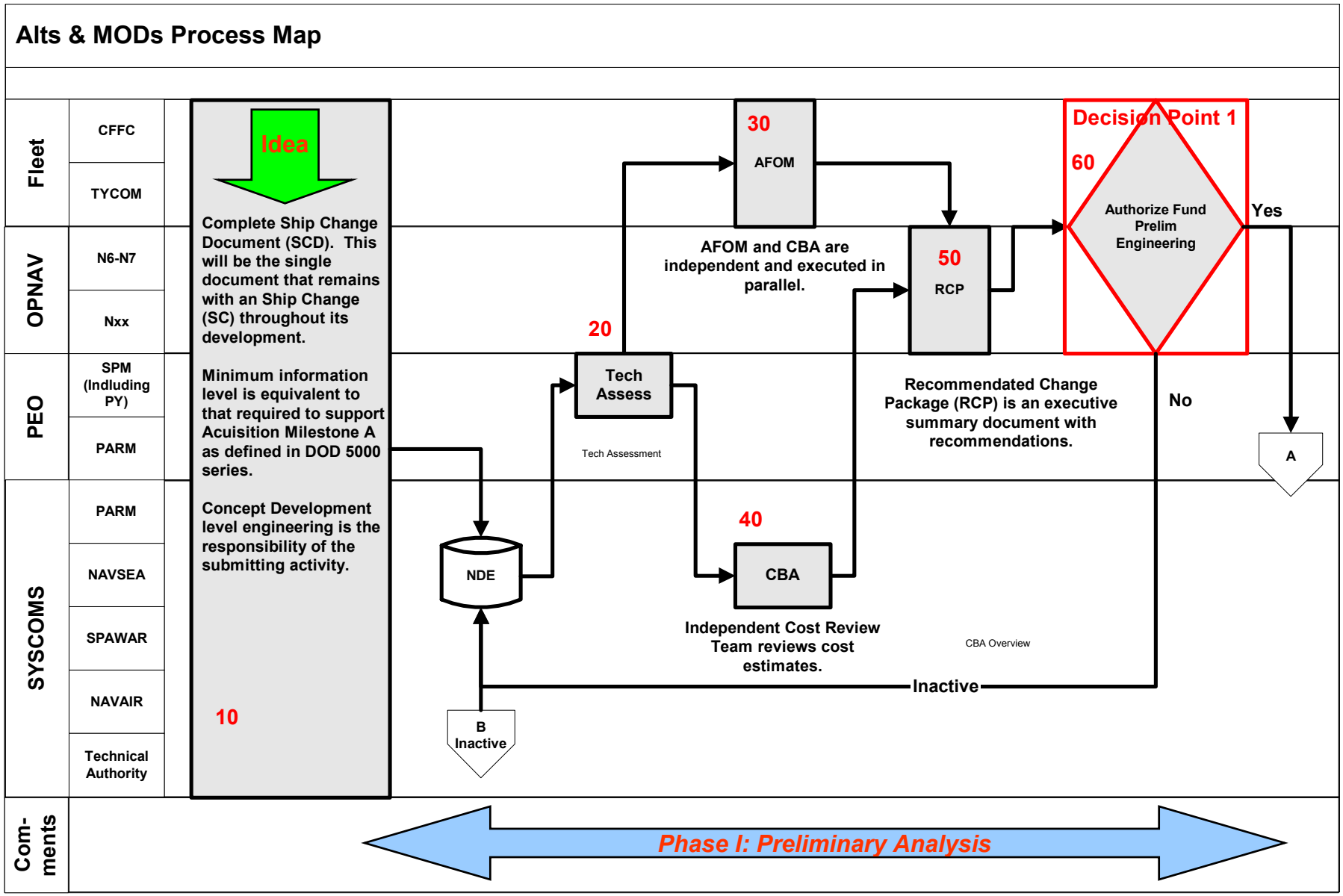
(2) Metric may be further refined for phase of development and type appropriation per the cost categories recorded in the CBA as follows:

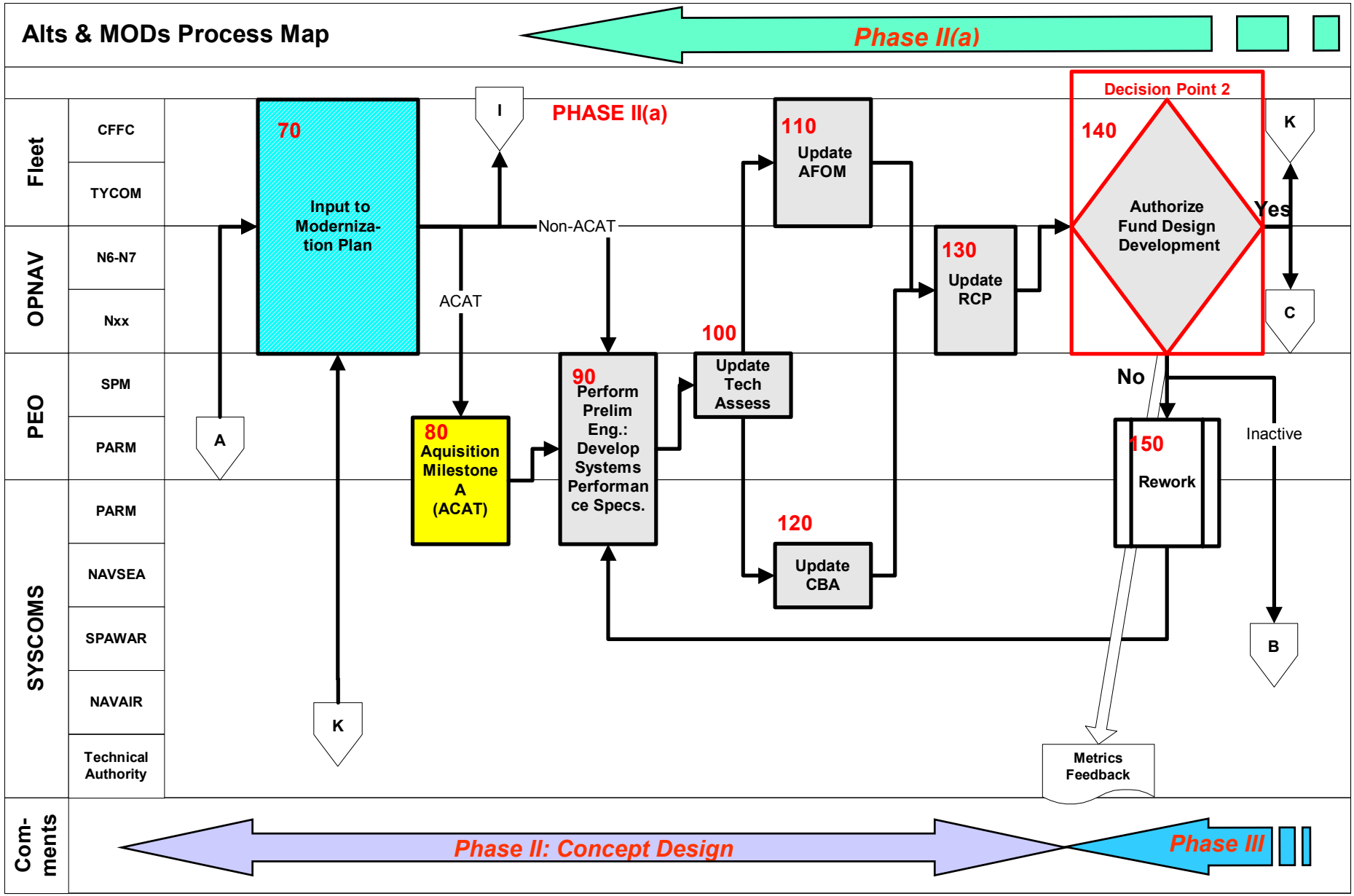
(a) Infrastructure investment – APPN/PE

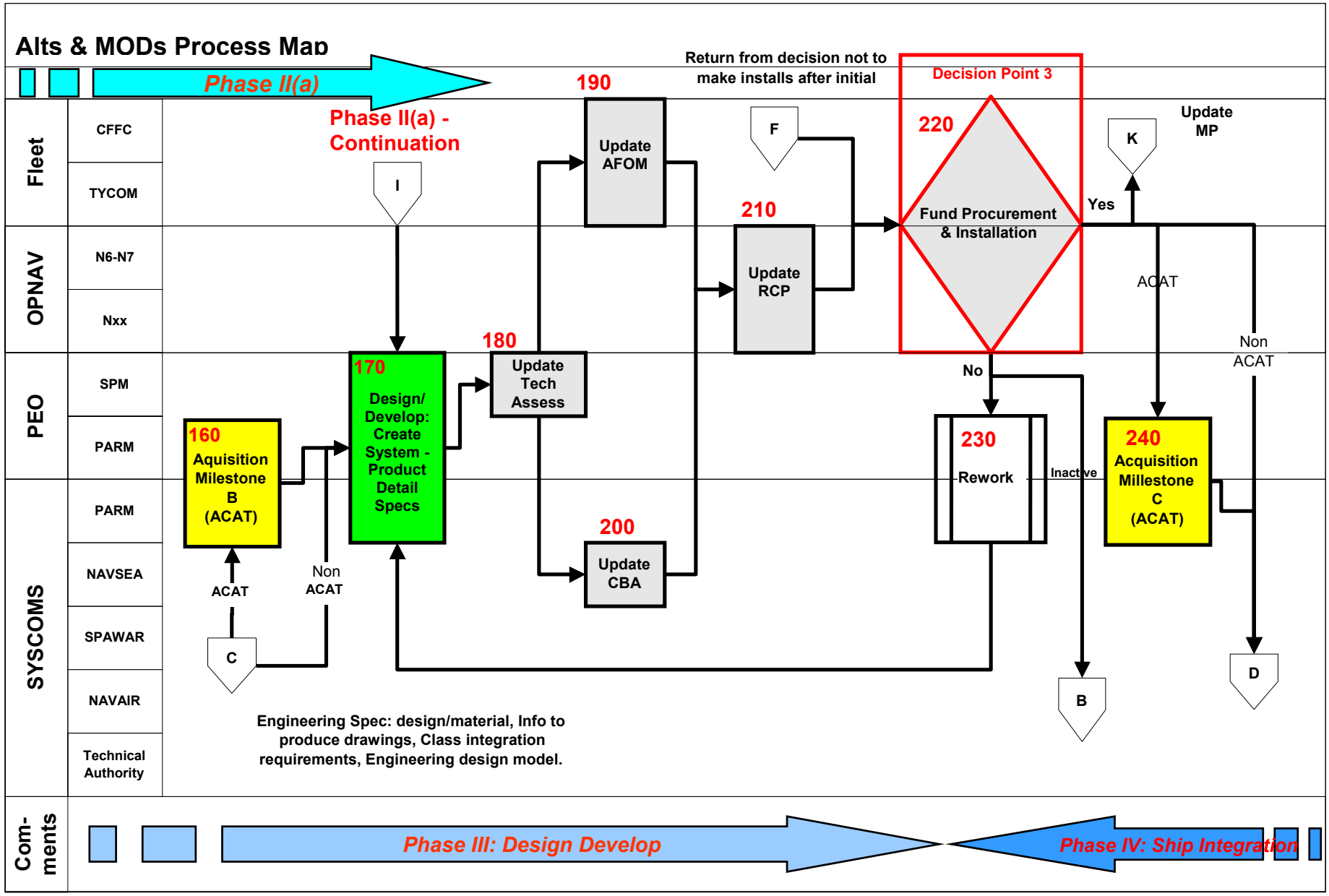
(b) Preliminary Engineering – APPN/PE

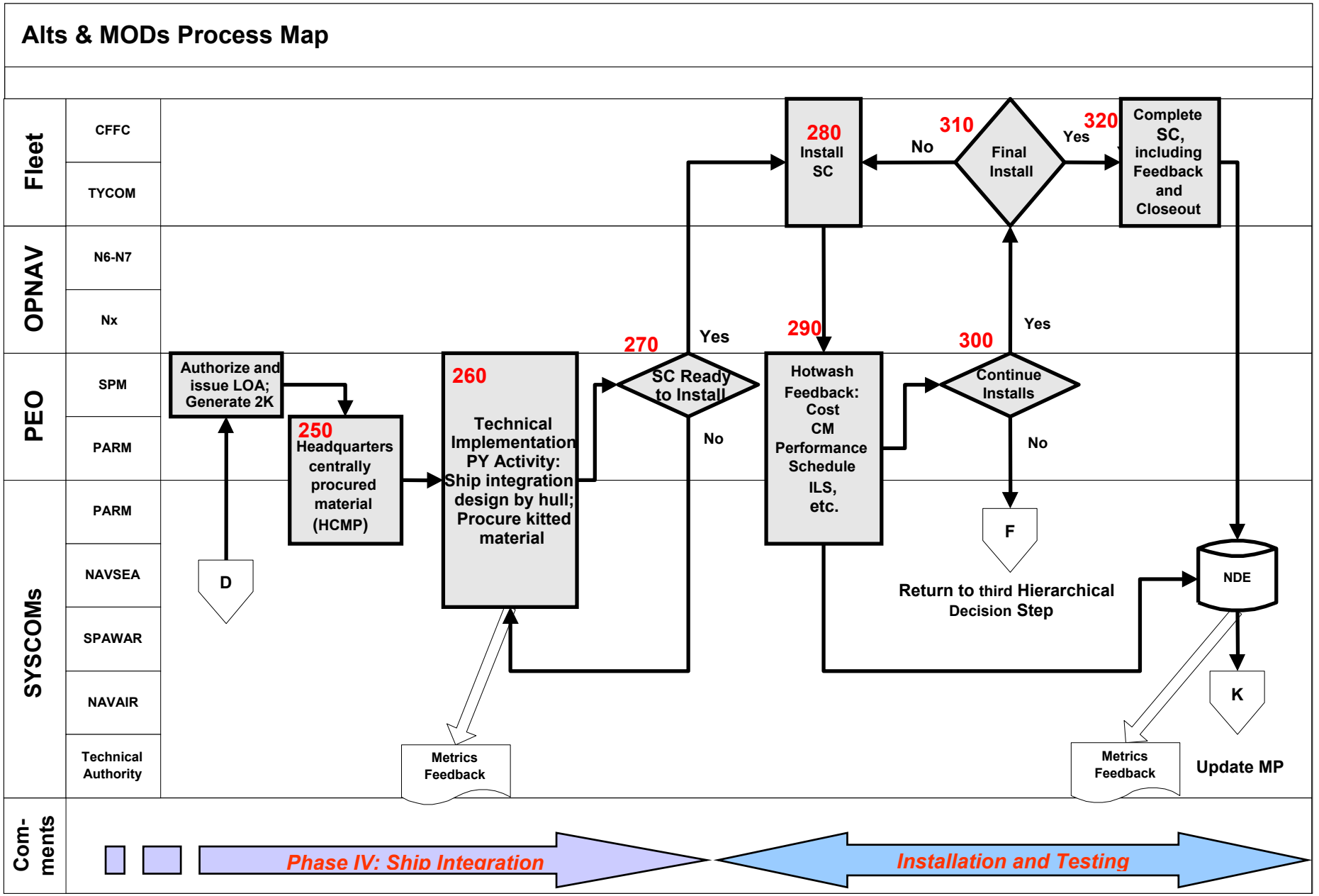
(c) Design Development – APPN/PE

02-04.10 Milestones. Ship/Carrier Modernization Entitled Process Milestones are listed in Appendix G of this chapter.


Alts & MODs Process Map
Fleet
CFFC
TYCOM
OPNAV
N6-N7
Nxx
PEO
SPM (Indluding PY)
PARM
SYSCOMS
PARM
NAVSEA
SPAWAR
NAVAIR
Technical Authority
Com-ments
Idea
Complete Ship Change Document (SCD). This will be the single document that remains with an Ship Change (SC) throughout its development.
Minimum information level is equivalent to that required to support Acuisition Milestone A as defined in DOD 5000 series.
Concept Development level engineering is the responsibility of the submitting activity.
10
NDE
B Inactive
20
Tech Assess
Tech Assessment
30
AFOM
AFOM and CBA are independent and executed in parallel.
40
CBA
Independent Cost Review Team reviews cost estimates.
CBA Overview
50
RCP
Recommendated Change Package (RCP) is an executive summary document with recommendations.
Decision Point 1
60
Authorize Fund Prelim Engineering
Yes
No
A
Inactive
Phase I: Preliminary Analysis


Alts & MODs Process Map
Phase II(a)
Fleet
CFFC
TYCOM
OPNAV
N6-N7
Nxx
PEO
SPM
PARM
SYSCOMS
PARM
NAVSEA
SPAWAR
NAVAIR
Technical Authority
Com-ments
PHASE II(a)
70
Input to Modernization Plan
I
Non-ACAT
ACAT
A
K
80
Aquisition Milestone A (ACAT)
90
Perform Prelim Eng.: Develop Systems Performance Specs.
100
Update Tech Assess
110
Update AFOM
120
Update CBA
130
Update RCP
Decision Point 2
140
Authorize Fund Design Development
Yes
No
K
C
150
Rework
Inactive
B
Metrics Feedback
Phase II: Concept Design
Phase III


Alts & MODs Process Map
Phase II(a)
Phase II(a) - Continuation
Return from decision not to make installs after initial
190
Update AFOM
F
210
Update RCP
Decision Point 3
220
Fund Procurement & Installation
Yes
K
Update MP
ACAT
Non ACAT
No
180
Update Tech Assess
170
Design/ Develop: Create System - Product Detail Specs
I
160
Aquisition Milestone B (ACAT)
ACAT
Non ACAT
C
200
Update CBA
230
Rework
Inactive
240
Acquisition Millestone C (ACAT)
B
D
Engineering Spec: design/material, Info to produce drawings, Class integration requirements, Engineering design model.
Fleet
CFFC
TYCOM
OPNAV
N6-N7
Nxx
PEO
SPM
PARM
SYSCOMS
PARM
NAVSEA
SPAWAR
NAVAIR
Technical Authority
Com-ments
Phase III: Design Develop
Phase IV: Ship Integration


Alts & MODs Process Map
Fleet
CFFC
TYCOM
OPNAV
N6-N7
Nx
PEO
SPM
PARM
SYSCOMs
PARM
NAVSEA
SPAWAR
NAVAIR
Technical Authority
Com-ments
Authorize and issue LOA; Generate 2K
250
Headquarters centrally procured material (HCMP)
260
Technical Implementation PY Activity: Ship integration design by hull; Procure kitted material
270
SC Ready to Install
Yes
No
280
Install SC
290
Hotwash Feedback: Cost CM Performance Schedule ILS, etc.
300
Continue Installs
Yes
No
310
Final Install
No
Yes
320
Complete SC, including Feedback and Closeout
D
F
Return to third Hierarchical Decision Step
NDE
K
Update MP
Metrics Feedback
Metrics Feedback
Phase IV: Ship Integration
Installation and Testing

JFMM ACN 02-04
SURFACE SHIP/AIRCRAFT CARRIER MODERNIZATION PROGRAM (SHIPMAIN)

SHIP CHANGE DOCUMENT TEMPLATE
PHASE I

CHANGE TRACKING NUMBER_____ **Recommend Expedite** ☐

DATE: _____ **CLASSIFIED/NOFORN:** YES____ NO____

1. SHIP CHANGE TITLE: _____

2. APPLICABLE SHIP/SHIP CLASS/SITES (INCLUDES SHORE FACILITIES): _____

3. RECOMMENDED SCD:

a. Scope: (Check all that apply)
- ❑ Internal Equipment Modification
- ❑ Ship Modification
- ❑ Site Modification

b. Category (Check all that apply)
- ❑ HM&E
- ❑ C4I
- ❑ CS
- ❑ Computer Program/Software

c. Duration
- ❑ Permanent
- ❑ Temporary

d. Funding
- ❑ Program
  - o Joint
- ❑ Fleet
  - o Joint

4. INITIATING POINT OF CONTACT: NAME___ ACTIVITY _____CODE___ PHONE___ EMAIL___ DATE_____N/A_____

5. SUBMITTING POINT OF CONTACT: NAME___ ACTIVITY/CODE ___ PHONE___ EMAIL___DATE_____

6. PARM POINT OF CONTACT: NAME___ ACTIVITY/CODE ___ PHONE___ EMAIL___TBD_____

7. TYCOM POINT OF CONTACT: NAME___ ACTIVITY/CODE ___ PHONE___ EMAIL___

8. TECHNICAL POINT OF CONTACT: NAME___ ACTIVITY/CODE ___ PHONE___ EMAIL___

9. DESCRIPTION OF CHANGE: _____

10. IMPACT IF NOT ACCOMPLISHED: _____

11. REQUIREMENTS AND JUSTIFICATION OF CHANGE (CITE DOCUMENT/REQUIREMENT IN NARRATIVE BOX)

- ❑ Statutory Requirement
- ❑ Legislated Regulatory Requirement
- ❑ Environmental Requirement
- ❑ Proposed Military Improvement
- ❑ Proposed Survivability Improvement
- ❑ Reduction of Total Owner Ship Costs (R-TOC)

- ❑ Battle Force Interoperability (BFI)
- ❑ Safety
- ❑ Mandatory Safety
- ❑ QOL/QOS
- ❑ Restoring Margins
- ❑ Contract Defect
- ❑ Unavailable, Obsolete or Unreliable Equipment
- ❑ Testing and Trial Deficiency
- ❑ Top Management Attention/Top Management Initiative (TMA/TMI)
- ❑ Aviation Capability and Air Wing Compatibility
- ❑ Anti-Terrorism/Force Protection
- ❑ Other

Need/Purpose Narrative:

12. DISTRIBUTIVE SYSTEMS/OTHER IMPACTS (Check at least one box)

	Yes	No
AC Plants/Chilled Water		
Electric Generation and Power Distribution Systems		
Topside Design/Mast Structure		
Fiber Optic Cable Plant		
Firemain		
Weight & Moment Change		
IC Switchboard & Database Multiplex System		
Electrical (400 Hz)		
Potable Water		
Fuel System		
Air Systems		
Networks		
IC Circuits		
HVAC		
Ships Characteristics Document change required		
Ship/Aviation Integration		
Storage Requirements		
Dry Docking Required		
Certification Required		
SUBSAFE		
Space Configuration		
Damage Control		
Software		
Weapons Systems		
Human Systems Integration (HSI)		
Hangar Bay/Flight Deck Encroachment		
Integrated Logistics Support (ILS)		
Prior/Concurrent/Conjunctive Alts		
Ordnance Handling/Storage		
Other (Systems/Equipment/Sites):		

13. AFOM

SEA SHIELD

Force Protection
- ❑ Protect against SOF & Terrorist Threats
- ❑ Mitigate effects of CBRNE

Surface Warfare
- ❑ Provide Self Defense against Surface Threats
- ❑ Conduct Offensive Operations against Surface Threats

Under Sea Warfare
- ❑ Provide Self Defense against Subsurface Threats
- ❑ Neutralize Submarine threats in the Littorals
- ❑ Neutralize open oceans Submarine Treats
- ❑ Counter Minefields from deep to shallow water
- ❑ Breach Minefields, Obstacles, and Barriers from very shallow water to the beach exit zone
- ❑ Conduct Mining Operations

Theater Air and Missile Defense
- ❑ Provide Self Defense against Air and Missile Threats
- ❑ Provide Maritime Air and Missile Defense
- ❑ Provide Overland Air and Missile Defense
- ❑ Conduct Sea-Based Missile Defense

SEA STRIKE

Strike
- ❑ Conduct Strike OPS
  - o Engage Fixed Land Targets
  - o Engage Moving Land Targets
- ❑ Conduct Special OPS
  - o Provide Precision Targeting
  - o Conduct Direct Action
- ❑ Conduct Offensive Information Operations
  - o Jam Potential Threats
  - o Conduct Network Attacks
- ❑ Provide Aircraft Survivability

Naval Fire Support
- ❑ Provide Precision Fires
- ❑ Provide High Volume Fires
- ❑ Provide Extended Range Fires

Maneuver
- ❑ Project/Reposition Forces
- ❑ Assault Centers of Gravity and Critical Vulnerabilities
- ❑ Conduct Concurrent/Follow-on Missions

Strategic Deterrence
- ❑ Conduct Nuclear Strike
- ❑ Provide Assured Survivability

SEA BASING

Close, Assemble, Employ,& Reconstitute
- ❑ Close the Force & Maintain Mobility
- ❑ Provide at Sea Arrival & Assembly
- ❑ Allow Selective Offload
- ❑ Reconstitute & Regenerate at Sea

Provide Integrated Joint Logistics
- ❑ Provide Sustainment for Operations at Sea
- ❑ Provide Sustainment for Operations Ashore
- ❑ Provide Focused Logistics
- ❑ Provide Shipboard and Mobile Maintenance
- ❑ Provide Force Medical Services
- ❑ Provide Advance Base Support

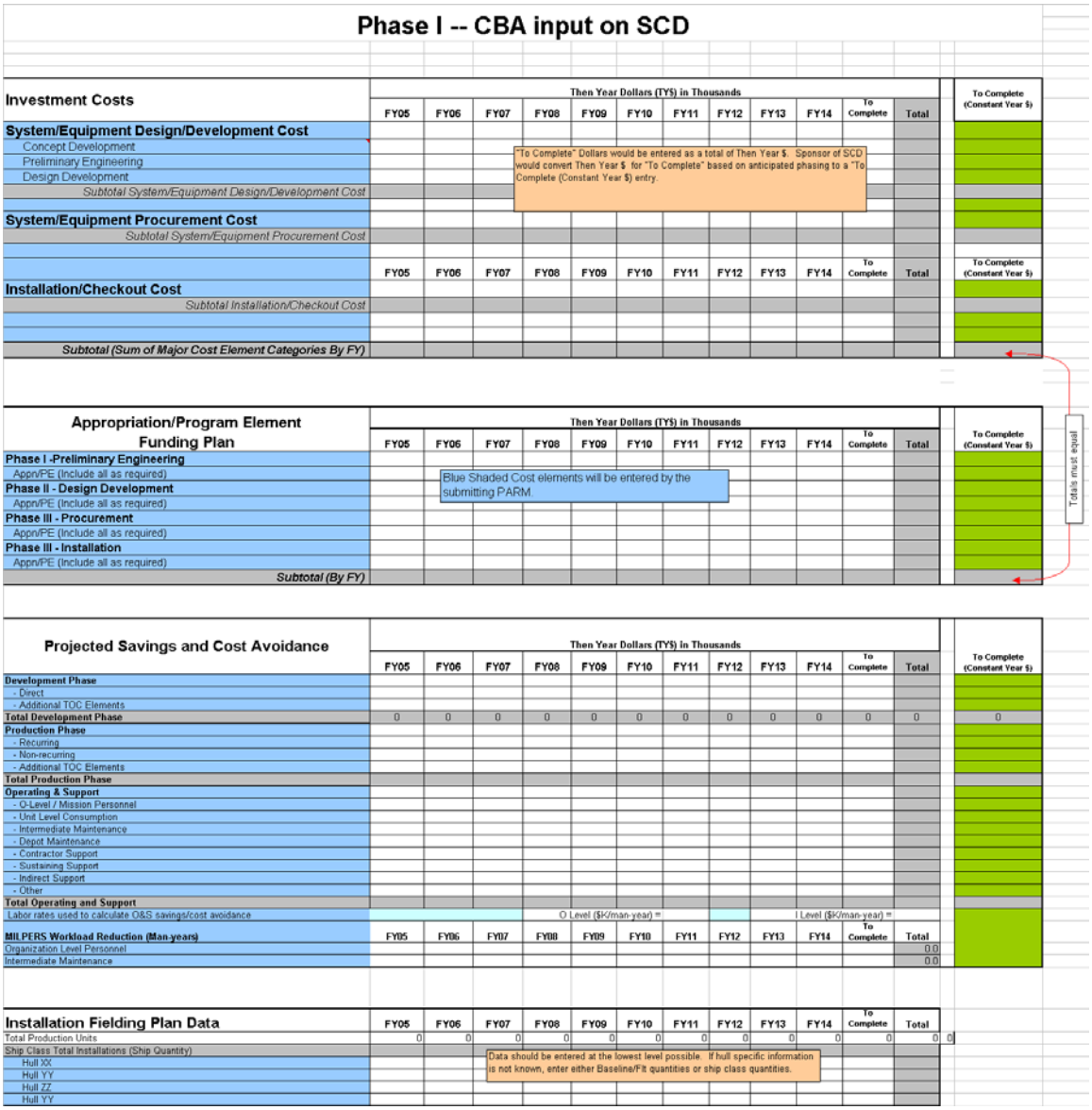
Preposition Joint Assets Afloat
- ❑ Integrate and Support Joint Personnel and Equipment
- ❑ Provide Afloat C2 Physical Infrastructure
- ❑ Provide AFSB Capability for Joint Operations

FORCENET

Communications and Data Networks
- ❑ Provide Communication Infrastructure
- ❑ Provide Network Protection
- ❑ Provide Network Synchronization
- ❑ Provide Information Transfer

Intel, Surveillance and Recon
- ❑ Conduct Sensor management and Information Processing
- ❑ Detect and ID Targets
  - o Fixed Land Targets
  - o Moving Land Targets
  - o Air and Missile Targets
  - o Surface Targets
  - o Submarine Targets
  - o Mines
- ❑ Provide Cueing and Targeting Information
- ❑ Assess Engagement Results

Common Operational and Tactical Pictures
- ❑ Provide Mission Planning
- ❑ Provide Battle Management Synchronization
- ❑ Provide Common PNT and Environmental Info
- ❑ Integrate and Distribute Sensor Info
- ❑ Track and Facilitate Engagement of Time Sensitive Targets
- ❑ Track and Facilitate Engagement of Non-Time Sensitive Targets



Phase I -- CBA input on SCD

Investment Costs	Then Year Dollars (TY$) in Thousands												To Complete (Constant Year $)
	FY05	FY06	FY07	FY08	FY09	FY10	FY11	FY12	FY13	FY14	To Complete	Total	
System/Equipment Design/Development Cost													
Concept Development													
Preliminary Engineering													
Design Development													
Subtotal System/Equipment Design/Development Cost													
System/Equipment Procurement Cost													
Subtotal System/Equipment Procurement Cost													
	FY05	FY06	FY07	FY08	FY09	FY10	FY11	FY12	FY13	FY14	To Complete	Total	To Complete (Constant Year $)
Installation/Checkout Cost													
Subtotal Installation/Checkout Cost													
Subtotal (Sum of Major Cost Element Categories By FY)													

"To Complete" Dollars would be entered as a total of Then Year $. Sponsor of SCD would convert Then Year $ for "To Complete" based on anticipated phasing to a "To Complete (Constant Year $) entry.

Appropriation/Program Element Funding Plan	Then Year Dollars (TY$) in Thousands												To Complete (Constant Year $)
	FY05	FY06	FY07	FY08	FY09	FY10	FY11	FY12	FY13	FY14	To Complete	Total	
Phase I -Preliminary Engineering													
Appn/PE (Include all as required)													
Phase II - Design Development													
Appn/PE (Include all as required)													
Phase III - Procurement													
Appn/PE (Include all as required)													
Phase III - Installation													
Appn/PE (Include all as required)													
Subtotal (By FY)													

Blue Shaded Cost elements will be entered by the submitting PARM.

Totals must equal

Projected Savings and Cost Avoidance	Then Year Dollars (TY$) in Thousands												To Complete (Constant Year $)
	FY05	FY06	FY07	FY08	FY09	FY10	FY11	FY12	FY13	FY14	To Complete	Total	
Development Phase													
- Direct													
- Additional TOC Elements													
Total Development Phase	0	0	0	0	0	0	0	0	0	0	0	0	0
Production Phase													
- Recurring													
- Non-recurring													
- Additional TOC Elements													
Total Production Phase													
Operating & Support													
- O-Level / Mission Personnel													
- Unit Level Consumption													
- Intermediate Maintenance													
- Depot Maintenance													
- Contractor Support													
- Sustaining Support													
- Indirect Support													
- Other													
Total Operating and Support													
Labor rates used to calculate O&S savings/cost avoidance					O Level ($K/man-year) =				I Level ($K/man-year) =				
MILPERS Workload Reduction (Man-years)	FY05	FY06	FY07	FY08	FY09	FY10	FY11	FY12	FY13	FY14	To Complete	Total	
Organization Level Personnel												0.0	
Intermediate Maintenance												0.0	

Installation Fielding Plan Data	FY05	FY06	FY07	FY08	FY09	FY10	FY11	FY12	FY13	FY14	To Complete	Total
Total Production Units	0	0	0	0	0	0	0	0	0	0	0	0 0
Ship Class Total Installations (Ship Quantity)												
Hull XX												
Hull YY												
Hull ZZ												
Hull YY												

Data should be entered at the lowest level possible. If hull specific information is not known, enter either Baseline/Flt quantities or ship class quantities.

14. CONCEPT DEVELOPMENT COST INFORMATION:

15. APPROVAL RECOMMENDATION:

Recommended Not Recommended Recommend Re-Work

NUCLEAR POWER DIRECTORATE (As Required)
Signature_____ **DATE** _____ _____ _____

SHIP PROGRAM MANAGER
Signature_____ **DATE** _____ _____ _____

CHANGE TRACKING NUMBER_____ **Recommend Expedite** ☐

SHIP CHANGE TITLE: _____

TECHNICAL REVIEW COMMENTS:

JFMM ACN 02-04
SURFACE SHIP/AIRCRAFT CARRIER MODERNIZATION PROGRAM (SHIPMAIN)

PHASE II

CHANGE TRACKING NUMBER_____ **Expedite Approved** ☐

SHIP CHANGE TITLE: _____

DESCRIPTION OF CHANGE: _____

IMPACT IF NOT ACCOMPLISHED: _____

APPLICABLE SHIP/SHIP CLASS/SITES: _____

DATE: _____

1. LIST APPLICABLE SHIP(s) WITHIN 5-YEAR DECOMMISIONING WINDOW: _____

2. DISTRIBUTIVE SYSTEMS IMPACT: (check box that applies)

	Net Increase	Net Decrease	No Net Impact	Unknown
AC Plants/Chilled Water				
Electric Generation and Power Distribution Systems				
Topside Design/Mast Structure				
Fiber Optic Cable Plant				
Firemain				
Weight & Moment Change				
IC Switchboard & Database Multiplex System				

3. OTHER CONSIDERATIONS (IF YES, PROVIDE EXPLANATION):

(i) Topside: **Yes No**

Explanation:

a. Ship Characteristics Document change required: **Yes No**

Explanation:

b. Ship/Aviation Integration Impact: **Yes No**

Explanation:

i. Storage Requirements: **Yes No**

Explanation:

ii. Dry Docking Required: **Yes No**

Explanation:

iii. Certification Required: **Yes No**

Explanation (include responsible activity):

(1) SUBSAFE Impact: **Yes No N/A**

(i) Network Impact: **Yes No**

Explanation:

(ii) Fuel System Impact: **Yes No**

Explanation:

(iii) IC Circuits Impact: **Yes No**

Explanation:

(iv) MCS/DCS Impact: **Yes No**

Explanation:

(v) Software Impact: **Yes No**

Explanation:

(vi) Weapons Systems Impact: **Yes No**

Explanation:

Space Configuration**:** Yes No

Explanation:

(vii) Hangar Bay/Flight Deck Impact: **Yes No**

Explanation:

Air Systems: Yes No

Explanation:

Ordnance Handling/Storage: Yes No

Explanation:

iv. Other: ____

Explanation:

4. SHOCK, VIBRATION AND EMI REQUIREMENTS:

Shock Grade (check one in accordance with the GSO section 072):

A B C N/A

Compliant with MIL-STD-167-1 Type 1 Vibration Requirements (check one):

Yes No N/A

Compliant with MIL-STD-461 EMI Requirements (check one):

Yes No N/A

Compliant with MIL-STD-464 EMI Requirements (check one):

Yes No Tailored (specifics appended) N/A

Compliant with OPNAVINST-2400.20 RF Spectrum Management Requirements

Yes No N/A

Compliant with HERO/HERP/HERF (NAVSEA OP 3565) Requirements (check one):

Yes No N/A

1. Remarks: _____

5. INTEGRATED LOGISTICS SUPPORT (ILS) IMPACT (check all that apply)

- ❑ Technical Manuals
- ❑ Provisioning
- ❑ Planned Maintenance System (PMS)
- ❑ Ship's Selected Records (Drawings & Manuals)
- ❑ Operating Sequencing Systems (OSS)
- ❑ Steam Plant Manual (SPM)
- ❑ Test Equipment
- ❑ Software management
  Specify software support activity: _____
- ❑ Spares Affected
  Specify responsible activity: _____
- ❑ COTS/NDI
- ❑ Facilities
- ❑ Other (Specify): _____

6. HUMAN SYSTEMS INTEGRATION (HSI) IMPACTS:

Manpower /Workload Impact: Yes / No
Brief Description:
Personnel Impact: Yes / No
Brief Description:
Training Impact: Yes / No
Brief Description:
Human Factors Engineering (HFE): Yes / No
Brief Description:
Habitability: Yes / No
Brief Description:
Environment, Safety and Occupational Health (ESOH): Yes / No
Brief Description:
Personnel Survivability: Yes / No
Brief Description:

7. CRITICAL MATERIAL: _____

8. PRIOR, CONJUNCTIVE OR CONCURRENT CHANGE ACCOMPLISHMENT (LIST ANY CHANGE THAT APPLIES): _____

9. ESWBS _____

10. DETAIL DESIGN CRITERIA: (Check all that apply)

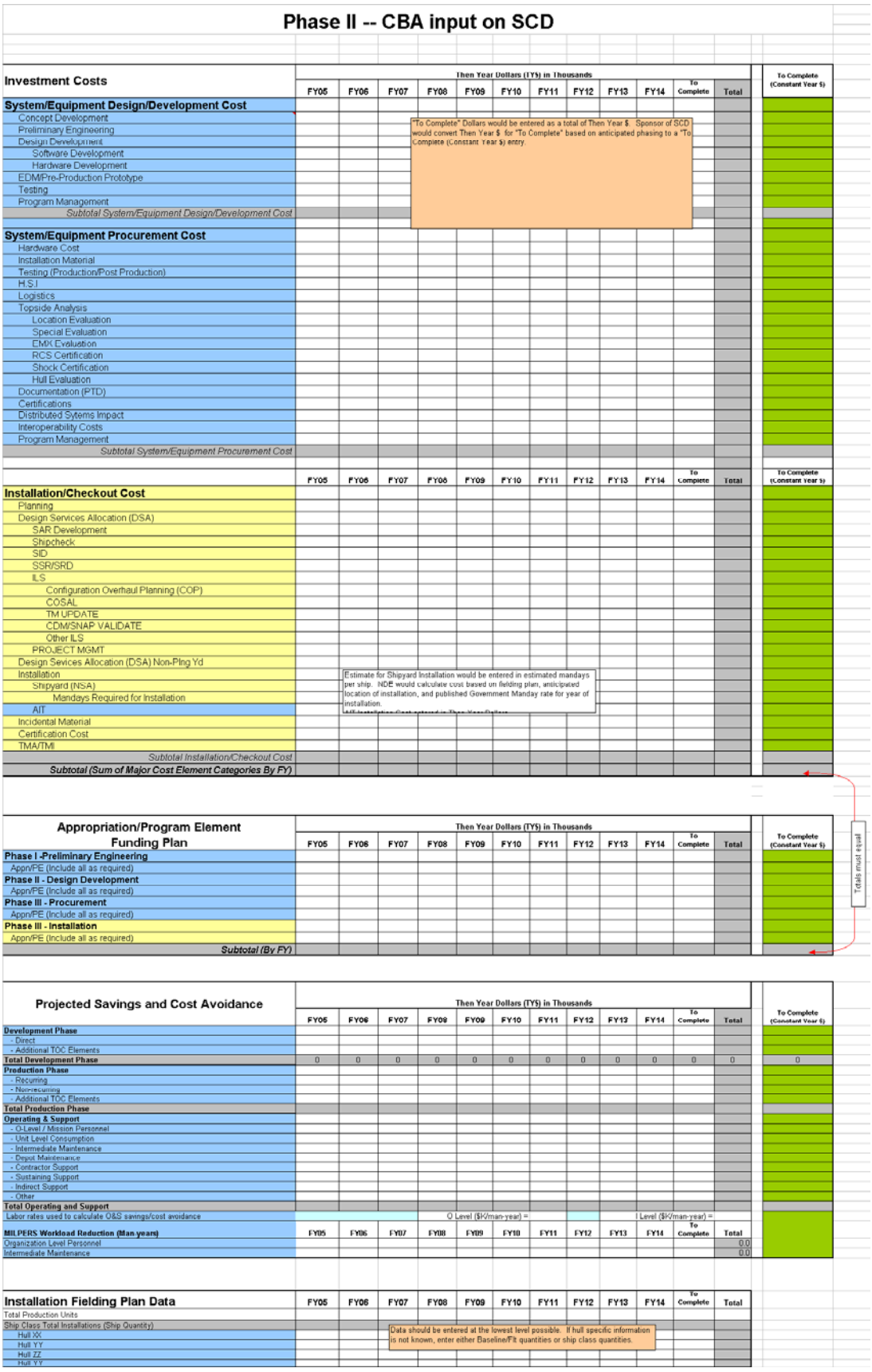
- ❑ Ship Specification
- ❑ Deep Diving General Overhaul Specification
- ❑ General Specifications for Overhaul (GSO)
- ❑ Other (Specify)_____

11. PROTOTYPE REQUIRED:

Yes_____ No_____
Approx Time Required Onboard _____

12. AFOM

13. CBA INFORMATION



Phase II -- CBA input on SCD

Investment Costs	Then Year Dollars (TYS) in Thousands												To Complete (Constant Year $)
	FY05	FY06	FY07	FY08	FY09	FY10	FY11	FY12	FY13	FY14	To Complete	Total	
System/Equipment Design/Development Cost													
Concept Development													
Preliminary Engineering													
Design Development													
Software Development													
Hardware Development													
EDM/Pre-Production Prototype													
Testing													
Program Management													
Subtotal System/Equipment Design/Development Cost													
System/Equipment Procurement Cost													
Hardware Cost													
Installation Material													
Testing (Production/Post Production)													
H,S,I													
Logistics													
Topside Analysis													
Location Evaluation													
Special Evaluation													
EMX Evaluation													
RCS Certification													
Shock Certification													
Hull Evaluation													
Documentation (PTD)													
Certifications													
Distributed Sytems Impact													
Interoperability Costs													
Program Management													
Subtotal System/Equipment Procurement Cost													
	FY05	FY06	FY07	FY08	FY09	FY10	FY11	FY12	FY13	FY14	To Complete	Total	To Complete (Constant Year $)
Installation/Checkout Cost													
Planning													
Design Services Allocation (DSA)													
SAR Development													
Shipcheck													
SID													
SSR/SRD													
ILS													
Configuration Overhaul Planning (COP)													
COSAL													
TM UPDATE													
CDM/SNAP VALIDATE													
Other ILS													
PROJECT MGMT													
Design Sevices Allocation (DSA) Non-Plng Yd													
Installation													
Shipyard (NSA)													
Mandays Required for Installation													
AIT													
Incidental Material													
Certification Cost													
TMA/TMI													
Subtotal Installation/Checkout Cost													
Subtotal (Sum of Major Cost Element Categories By FY)													

"To Complete" Dollars would be entered as a total of Then Year $. Sponsor of SCD would convert Then Year $ for "To Complete" based on anticipated phasing to a "To Complete (Constant Year $) entry.

Estimate for Shipyard Installation would be entered in estimated mandays per ship. NDE would calculate cost based on fielding plan, anticipated location of installation, and published Government Manday rate for year of installation.

Appropriation/Program Element Funding Plan	Then Year Dollars (TYS) in Thousands												To Complete (Constant Year $)
	FY05	FY06	FY07	FY08	FY09	FY10	FY11	FY12	FY13	FY14	To Complete	Total	
Phase I -Preliminary Engineering													
Appn/PE (Include all as required)													
Phase II - Design Development													
Appn/PE (Include all as required)													
Phase III - Procurement													
Appn/PE (Include all as required)													
Phase III - Installation													
Appn/PE (Include all as required)													
Subtotal (By FY)													

Totals must equal

Projected Savings and Cost Avoidance	Then Year Dollars (TYS) in Thousands												To Complete (Constant Year $)
	FY05	FY06	FY07	FY08	FY09	FY10	FY11	FY12	FY13	FY14	To Complete	Total	
Development Phase													
- Direct													
- Additional TOC Elements													
Total Development Phase	0	0	0	0	0	0	0	0	0	0	0	0	0
Production Phase													
- Recurring													
- Non-recurring													
- Additional TOC Elements													
Total Production Phase													
Operating & Support													
- O-Level / Mission Personnel													
- Unit Level Consumption													
- Intermediate Maintenance													
- Depot Maintenance													
- Contractor Support													
- Sustaining Support													
- Indirect Support													
- Other													
Total Operating and Support													
Labor rates used to calculate O&S savings/cost avoidance				O Level ($K/man-year) =						Level ($K/man-year) =			
MILPERS Workload Reduction (Man years)	FY05	FY06	FY07	FY08	FY09	FY10	FY11	FY12	FY13	FY14	To Complete	Total	
Organization Level Personnel												0.0	
Intermediate Maintenance												0.0	

Installation Fielding Plan Data	FY05	FY06	FY07	FY08	FY09	FY10	FY11	FY12	FY13	FY14	To Complete	Total
Total Production Units												
Ship Class Total Installations (Ship Quantity)												
Hull XX												
Hull YY												
Hull ZZ												
Hull YY												

Data should be entered at the lowest level possible. If hull specific information is not known, enter either Baseline/Flt quantities or ship class quantities.

14. APPROVAL RECOMMENDATION:

		Recommended	Not Recommended	Recommend Re-Work
NUCLEAR POWER DIRECTORATE (As Required)				
Signature_____	DATE	_____	_____	_____
SHIP PROGRAM MANAGER				
Signature_____	DATE	_____	_____	_____

TECHNICAL REVIEW COMMENTS:

JFMM ACN 02-04
SURFACE SHIP/AIRCRAFT CARRIER MODERNIZATION PROGRAM (SHIPMAIN)

PHASE III

CHANGE TRACKING NUMBER_____ **Recommend Expedite** ☐

SHIP CHANGE TITLE: _____

DESCRIPTION OF CHANGE: _____

IMPACT IF NOT ACCOMPLISHED: _____

APPLICABLE SHIP/SHIP CLASS/SITES: _____

DATE: _____

1. SYSTEM/EQUIPMENT DESIGNATION: _____

2. MODEL NO.____

3. CAGE CODE____

4. DETAILED DESCRIPTION OF CHANGE:_____

5. DISTRIBUTIVE SYSTEMS IMPACT:

	Added	**Removed**
A/C Plants / Chilled Water Dist (Tons A/C)		
(CHW GPM)		
Electrical Generation and Power Dist Sys (kW)		
Topside Design / Mast Structure (Weight in Tons)		
Fiber Optic Cable Plant (Yes / No)		
Firemain (GPM)		
Ship's Stability (Weight in Tons)		
IC SWBD and Database Multiplex Sys (Loads)		

6. ARE THERE REFERENCES/SUPPORTING DOCUMENTATION IN ADDITION TO STANDARD REQUIREMENTS? Yes____ No_____

7. ESTIMATED WEIGHT AND MOMENT:

WEIGHT	VCG	LCG	TCG
Stability Statement			

8. CHANGE MATERIAL/SOFTWARE LIST:

ITEM NO.	DESCRIPTION	UNIT OF ISSUE	QUANTITY	PROCURING ACTIVITY

9. ARE THERE QUALITY ASSURANCE REQUIREMENTS IN ADDITION TO STANDARD REQUIREMENTS? Yes____ No_____

If Yes, List Requirements:_____

10. SPECIAL DISPOSITION REQUIREMENTS FOR REMOVED MATERIAL:

MATERIAL	DISPOSITION

11. INSTALLATION SUPPORT AND TEST EQUIPMENT:_____

12. SHIPBOARD STOWAGE DETAILS:_____

13. NAVSEA SHIP INSTALLATION DRAWING (SID) REVIEW REQUIRED: YES___ NO___

14. SPECIAL INDUSTRIAL STOWAGE REQUIREMENTS:_____

15. REQUIRED PRIOR, CONJUNCTIVE OR CONCURRENT CHANGES:_____

16. OTHER SYSTEMS IMPACTS:_____

17. INSTALLATION DURATION:_____

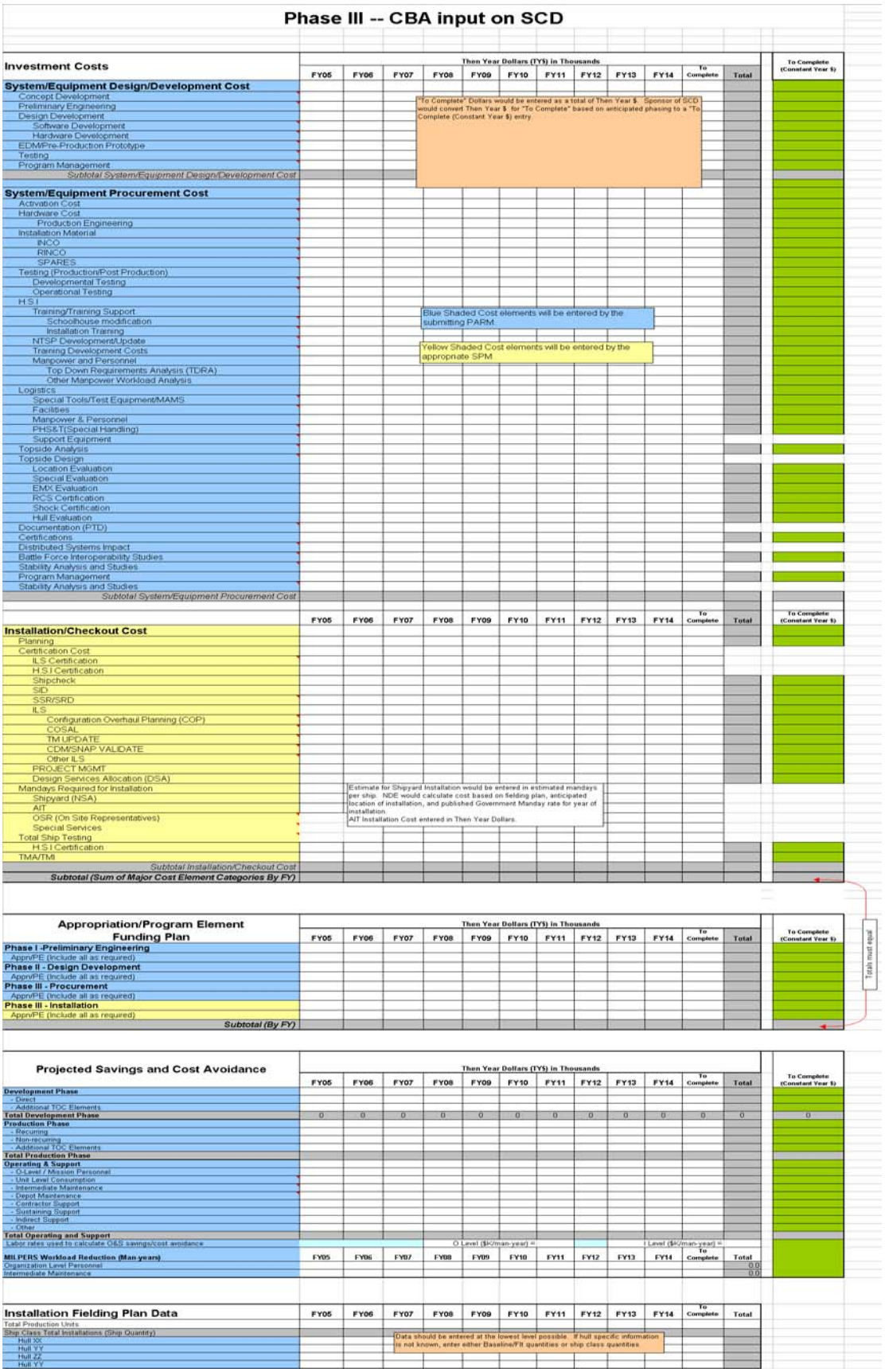
18. HUMAN SYSTEMS INTEGRATION (HSI):

Manpower/Workload:_____
Personnel:_____
Training:_____
Human Factors Engineering (HFE):_____
Habitability:_____
Environment, Safety and Occupational Health (ESOH):_____
Personnel Survivability:_____

19. CERTIFICATIONS/QUALIFICATIONS REQUIRED (CHECK ALL THAT APPLY):

ILS Cert _____ Estimated Completion Date _____
HSI Cert _____ Estimated Completion Date _____
EMI Cert_____ Estimated Completion Date _____
WSESRB_____Estimated Completion Date _____
Software Cert_____ Estimated Completion Date _____
Shock Qualification____ Estimated Completion Date _____
SPAWAR PPL/SSIL (IT-21) Cert_____Estimated Completion Date_____
SEA 62 Interoperability Cert_____Estimated Completion Date_____
Other Cert (Specify)_____ Estimated Completion Date _____
Other Cert (Specify)_____ Estimated Completion Date _____

20. DETAILED COST STRUCTURE:



Phase III -- CBA input on SCD

Investment Costs	Then Year Dollars (TY$) in Thousands												To Complete (Constant Year $)
	FY05	FY06	FY07	FY08	FY09	FY10	FY11	FY12	FY13	FY14	To Complete	Total	
System/Equipment Design/Development Cost													
Concept Development													
Preliminary Engineering													
Design Development													
Software Development													
Hardware Development													
EDM/Pre-Production Prototype													
Testing													
Program Management													
Subtotal System/Equipment Design/Development Cost													
System/Equipment Procurement Cost													
Activation Cost													
Hardware Cost													
Production Engineering													
Installation Material													
INCO													
RINCO													
SPARES													
Testing (Production/Post Production)													
Developmental Testing													
Operational Testing													
H.S.I													
Training/Training Support													
Schoolhouse modification													
Installation Training													
NTSP Development/Update													
Training Development Costs													
Manpower and Personnel													
Top Down Requirements Analysis (TDRA)													
Other Manpower Workload Analysis													
Logistics													
Special Tools/Test Equipment/MAMS													
Facilities													
Manpower & Personnel													
PHS&T(Special Handling)													
Support Equipment													
Topside Analysis													
Topside Design													
Location Evaluation													
Special Evaluation													
EMX Evaluation													
RCS Certification													
Shock Certification													
Hull Evaluation													
Documentation (PTD)													
Certifications													
Distributed Systems Impact													
Battle Force Interoperability Studies													
Stability Analysis and Studies													
Program Management													
Stability Analysis and Studies													
Subtotal System/Equipment Procurement Cost													

"To Complete" Dollars would be entered as a total of Then Year $. Sponsor of SCD would convert Then Year $ for "To Complete" based on anticipated phasing to a "To Complete (Constant Year $) entry.

Blue Shaded Cost elements will be entered by the submitting PARM.

Yellow Shaded Cost elements will be entered by the appropriate SPM.

	FY05	FY06	FY07	FY08	FY09	FY10	FY11	FY12	FY13	FY14	To Complete	Total	To Complete (Constant Year $)
Installation/Checkout Cost													
Planning													
Certification Cost													
ILS Certification													
H.S.I Certification													
Shipcheck													
SID													
SSR/SRD													
ILS													
Configuration Overhaul Planning (COP)													
COSAL													
TM UPDATE													
CDM/SNAP VALIDATE													
Other ILS													
PROJECT MGMT													
Design Services Allocation (DSA)													
Mandays Required for Installation													
Shipyard (NSA)													
AIT													
OSR (On Site Representatives)													
Special Services													
Total Ship Testing													
H.S.I Certification													
TMA/TMI													
Subtotal Installation/Checkout Cost													
Subtotal (Sum of Major Cost Element Categories By FY)													

Estimate for Shipyard Installation would be entered in estimated mandays per ship. NDE would calculate cost based on felding plan, anticipated location of installation, and published Government Manday rate for year of installation.
AIT Installation Cost entered in Then Year Dollars.

Appropriation/Program Element Funding Plan	Then Year Dollars (TY$) in Thousands												To Complete (Constant Year $)
	FY05	FY06	FY07	FY08	FY09	FY10	FY11	FY12	FY13	FY14	To Complete	Total	
Phase I -Preliminary Engineering													
Appn/PE (Include all as required)													
Phase II - Design Development													
Appn/PE (Include all as required)													
Phase III - Procurement													
Appn/PE (Include all as required)													
Phase III - Installation													
Appn/PE (Include all as required)													
Subtotal (By FY)													

Totals must equal

Projected Savings and Cost Avoidance	Then Year Dollars (TY$) in Thousands												To Complete (Constant Year $)
	FY05	FY06	FY07	FY08	FY09	FY10	FY11	FY12	FY13	FY14	To Complete	Total	
Development Phase													
- Direct													
- Additional TOC Elements													
Total Development Phase	0	0	0	0	0	0	0	0	0	0	0	0	0
Production Phase													
- Recurring													
- Non-recurring													
- Additional TOC Elements													
Total Production Phase													
Operating & Support													
- O-Level / Mission Personnel													
- Unit Level Consumption													
- Intermediate Maintenance													
- Depot Maintenance													
- Contractor Support													
- Sustaining Support													
- Indirect Support													
- Other													
Total Operating and Support													
Labor rates used to calculate O&S savings/cost avoidance				O Level ($K/man-year) =					I Level ($K/man-year) =				
MILPERS Workload Reduction (Man-years)	FY05	FY06	FY07	FY08	FY09	FY10	FY11	FY12	FY13	FY14	To Complete	Total	
Organization Level Personnel												0.0	
Intermediate Maintenance												0.0	

Installation Fielding Plan Data	FY05	FY06	FY07	FY08	FY09	FY10	FY11	FY12	FY13	FY14	To Complete	Total
Total Production Units												
Ship Class Total Installations (Ship Quantity)												
Hull XX												
Hull YY												
Hull ZZ												
Hull YY												

Data should be entered at the lowest level possible. If hull specific information is not known, enter either Baseline/Flt quantities or ship class quantities.

21. THIS IS WHERE THE PHASE III AFOM STUFF GOES

22. APPROVAL RECOMMENDATION:

		Recommended	Not Recommended	Recommend Re-Work
NUCLEAR POWER DIRECTORATE (As Required)				
Signature_____	**DATE**	_____	_____	_____
SHIP PROGRAM MANAGER				
Signature_____	**DATE**	_____	_____	_____

TECHNICAL EVALUATION COMMENTS:

CHANGE TRACKING NUMBER_____ **Recommend Expedite** ☐
SHIP CHANGE TITLE: _____
DESCRIPTION OF CHANGE: _____
IMPACT IF NOT ACCOMPLISHED: _____
APPLICABLE SHIP/SHIP CLASS/SITES: _____
DATE: _____

1. LIST APPLICABLE SHIP(s) WITHIN 5-YEAR DECOMMISIONING WINDOW: _____

2. SYSTEM/EQUIPMENT DESIGNATION: _____

3. MODEL NO.____

4. CAGE CODE____

5. DETAILED DESCRIPTION OF CHANGE:_____

6. ESWBS _____

7. PROTOTYPE REQUIRED:

Yes_____ No_____
Approx Time Required Onboard_____

8. **DISTRIBUTIVE SYSTEMS IMPACT: (check box that applies)**

	Added	**Removed**
A/C Plants / Chilled Water Dist (Tons A/C)		
(CHW GPM)		
Electrical Generation and Power Dist Sys (kW)		
Topside Design / Mast Structure (Weight in Tons)		
Fiber Optic Cable Plant (Yes / No)		
Firemain (GPM)		
Ship's Stability (Weight in Tons)		
IC SWBD and Database Multiplex Sys (Loads)		

9. OTHER CONSIDERATIONS (IF YES, PROVIDE EXPLANATION):

(i) Topside: **Yes No**

Explanation:

a. Ship Characteristics Document change required: **Yes No**

Explanation:

b. Ship/Aviation Integration Impact: **Yes No**

Explanation:

i. Storage Requirements: **Yes No**

Explanation:

ii. Dry Docking Required: **Yes No**

Explanation:

iii. Certification Required: **Yes No**

Explanation (include responsible activity):

(1) SUBSAFE Impact: **Yes No N/A**

(i) Network Impact: **Yes No**

Explanation:

(ii) Fuel System Impact: **Yes No**

Explanation:

(iii) IC Circuits Impact: **Yes No**

Explanation:

(iv) MCS/DCS Impact: **Yes No**

Explanation:

(v) Software Impact: **Yes No**

Explanation:

(vi) Weapons Systems Impact: **Yes No**

Explanation:

Space Configuration: **Yes No**

Explanation:

(vii) Hangar Bay/Flight Deck Impact: **Yes No**

Explanation:

Air Systems: **Yes No**

Explanation:

Ordnance Handling/Storage: **Yes No**

Explanation:

iv. Other: ____

Explanation:

10. SHOCK, VIBRATION AND EMI REQUIREMENTS:

Shock Grade (check one in accordance with the GSO section 072):

A B C N/A

Compliant with MIL-STD-167-1 Type 1 Vibration Requirements (check one):

Yes No N/A

Compliant with MIL-STD-461 EMI Requirements (check one):

Yes No N/A

Compliant with MIL-STD-464 EMI Requirements (check one):

Yes No Tailored (specifics appended) N/A

Compliant with OPNAVINST-2400.20 RF Spectrum Management Requirements

Yes No N/A

Compliant with HERO/HERP/HERF (NAVSEA OP 3565) Requirements (check one):

Yes No N/A

1. **Remarks:** _____

11. INTEGRATED LOGISTICS SUPPORT (ILS) IMPACT (check all that apply)

- ❑ Technical Manuals
- ❑ Provisioning
- ❑ Planned Maintenance System (PMS)
- ❑ Ship's Selected Records (Drawings & Manuals)
- ❑ Operating Sequencing Systems (OSS)
- ❑ Steam Plant Manual (SPM)
- ❑ Test Equipment
- ❑ Software management
  Specify software support activity: _____
- ❑ Spares Affected
  Specify responsible activity: _____
- ❑ COTS/NDI
- ❑ Facilities

Other (Specify): _____

12. DETAIL DESIGN CRITERIA: (Check all that apply)

- ❑ Ship Specification
- ❑ Deep Diving General Overhaul Specification
- ❑ General Specifications for Overhaul (GSO)
- ❑ Other (Specify)_____

13. ARE THERE QUALITY ASSURANCE REQUIREMENTS IN ADDITION TO STANDARD REQUIREMENTS? Yes____ No_____
If Yes, List Requirements:_____

14. REFERENCES/SUPPORTING DOCUMENTATION:

15. ESTIMATED WEIGHT AND MOMENT:

WEIGHT	VCG	LCG	TCG
Stability Statement			

16. CHANGE MATERIAL/SOFTWARE LIST:

ITEM NO.	DESCRIPTION	UNIT OF ISSUE	QUANTITY	PROCURING ACTIVITY

17. SPECIAL DISPOSITION REQUIREMENTS FOR REMOVED MATERIAL:

MATERIAL	DISPOSITION

18. INSTALLATION SUPPORT AND TEST EQUIPMENT:_____

19. SHIPBOARD STOWAGE DETAILS:_____

20. NAVSEA SHIP INFORMATION DRAWING (SID) REVIEW REQUIRED: YES___ NO___

21. SPECIAL INDUSTRIAL STOWAGE REQUIREMENTS:_____

22. REQUIRED PRIOR, CONJUNCTIVE OR CONCURRENT CHANGES:_____

23. INSTALLATION DURATION:_____

24. HUMAN SYSTEMS INTEGRATION (HSI):

Manpower/Workload:_____
Personnel:_____
Training:_____
Human Factors Engineering (HFE):_____
Habitability:_____
Environment, Safety and Occupational Health (ESOH):_____
Personnel Survivability:_____

25. CERTIFICATIONS/QUALIFICATIONS AS REQUIRED:

ILS Cert _____ Target Completion Date _____
HSI Cert _____ Target Completion Date _____
EMI Cert_____ Target Completion Date _____
WSESRB_____ Target Completion Date _____
Software Cert_____ Target Completion Date _____
Shock Qualification____ Target Completion Date _____
SPAWAR PPL/SSIL (IT-21) Cert_____ Estimated Completion Date_____
SEA 62 Interoperability Cert_____ Estimated Completion Date_____
Other Cert (Specify)_____ Target Completion Date _____
Other Cert (Specify)_____ Target Completion Date _____

26. DETAILED COST STRUCTURE:

	FYXX	FYXX	FYXX	FYXX	FYXX	FYXX	FYXX	FYXX	FYXX	FYXX	Total
System/Equipment Design/Development Cost											
Concept Development											
Preliminary Engineering											
Design Development											
Software Development											
Hardware Development											
EDM/Pre-Production Prototype											
Testing											
Program Management											
Subtotal System/Equipment Design/Development Cost											
System/Equipment Procurement Cost											
Activation Cost											
Hardware Cost											
Installation Material											
Testing (Production/Post Production)											
Developmental Testing											
Operational Testing											
H.S.I											
Training/Training Support											
Schoolhouse modification											
Installation Training											
NTSP Development/Update											
Training Development Costs											
Manpower and Personnel											
Top Down Requirements Analysis (TDRA)											
Other Manpower Workload Analysis											
Logistics											
Special Tools/Test Equipment											
Facilities											
Manpower & Personnel											
Spares (testing)											
Repair parts											
PHS&T											
Documentation (PTD)											
Certification Cost											
ILS Certification											
H.S.I Certification											
Interoperability Costs											
Program Management											
Subtotal System/Equipment Procurement Cost											
	FYXX	FYXX	FYXX	FYXX	FYXX	FYXX	FYXX	FYXX	FYXX	FYXX	Total
Installation/Checkout Cost											
Planning											
Design Services Allocation (DSA)											
SAR Development											
Shipcheck											
SID											
SSR/SRD											
ILS											
Configuration Overhaul Planning (COP)											
COSAL											
TM UPDATE											
CDM/SNAP VALIDATE											
Other ILS											
PROJECT MGMT											
Design Sevices Allocation (DSA) Non-Plng Yd											
Installation											
Shipyard (NSA)											
AIT											
Incidental Material											
Certifications											
TMA/TMI											
Topside Analysis											
Subtotal Installation/Checkout Cost											
Subtotal (Sum of Major Cost Element Categories By FY)											
Funding Phasing Plan											
	FYXX	FYXX	FYXX	FYXX	FYXX	FYXX	FYXX	FYXX	FYXX	FYXX	Total
Preliminary Engineering											
Appn/PE (Include all as required)											
Design Development											
Appn/PE (Include all as required)											
Procurement											
Appn/PE (Include all as required)											
Installation											
Appn/PE (Include all as required)											
Subtotal (By FY)											
Projected Savings and Cost Avoidance	FYXX	FYXX	FYXX	FYXX	FYXX	FYXX	FYXX	FYXX	FYXX	FYXX	Total
Development Phase											
- Direct											
- Additional TOC Elements											
Total Development Phase											
Production Phase											
- Recurring											
- Non-recurring											
- Additional TOC Elements											
Total Production Phase											
Operating & Support											
- O-Level / Mission Personnel											
- Unit Level Consumption											
- Intermediate Maintenance											
- Depot Maintenance											
- Contractor Support											
- Sustaining Support											
- Indirect Support											
- Other											
Total Operating and Support											

27. (This is where the PHASE II AFOM stuff goes)

28. APPROVAL RECOMMENDATION:

		Recommended	Not Recommended	Recommend Re-Work
NUCLEAR POWER DIRECTORATE (As Required)				
Signature_____	**DATE**	_____	_____	_____
SHIP PROGRAM MANAGER				
Signature_____	**DATE**	_____	_____	_____

TECHNICAL REVIEW COMMENTS:

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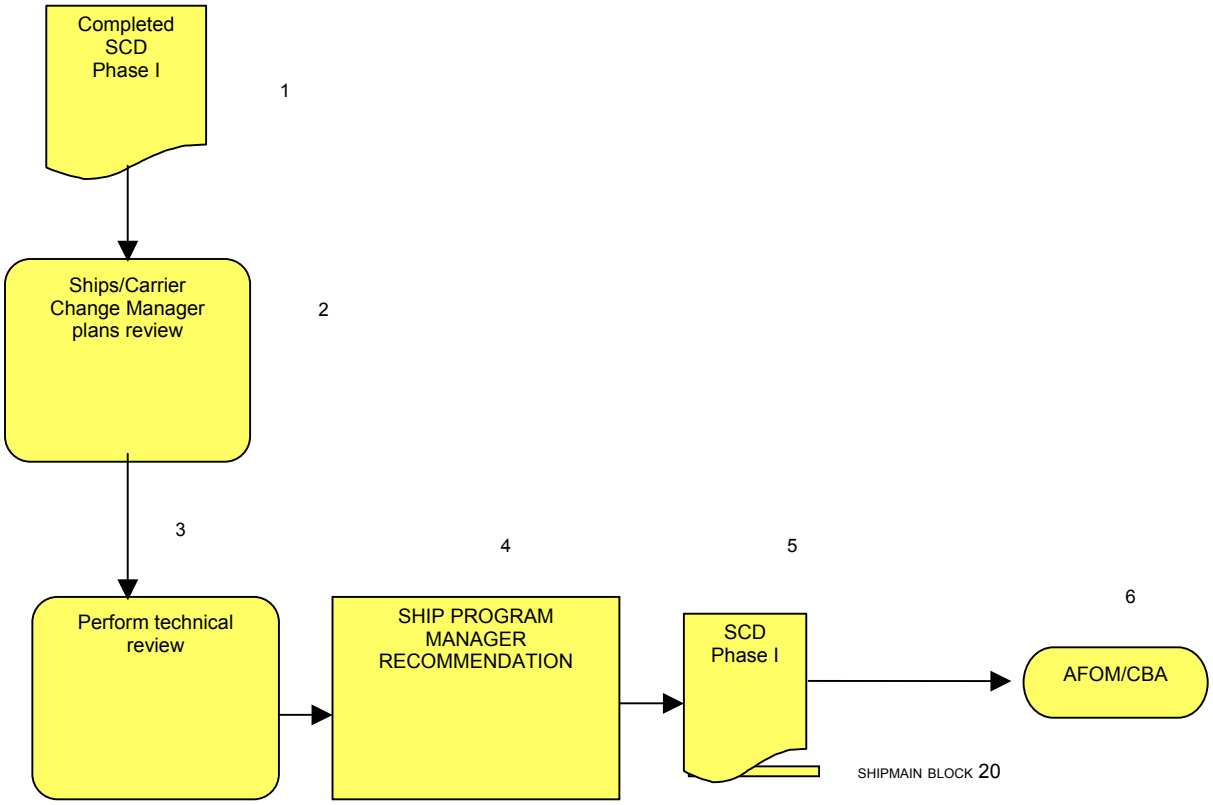
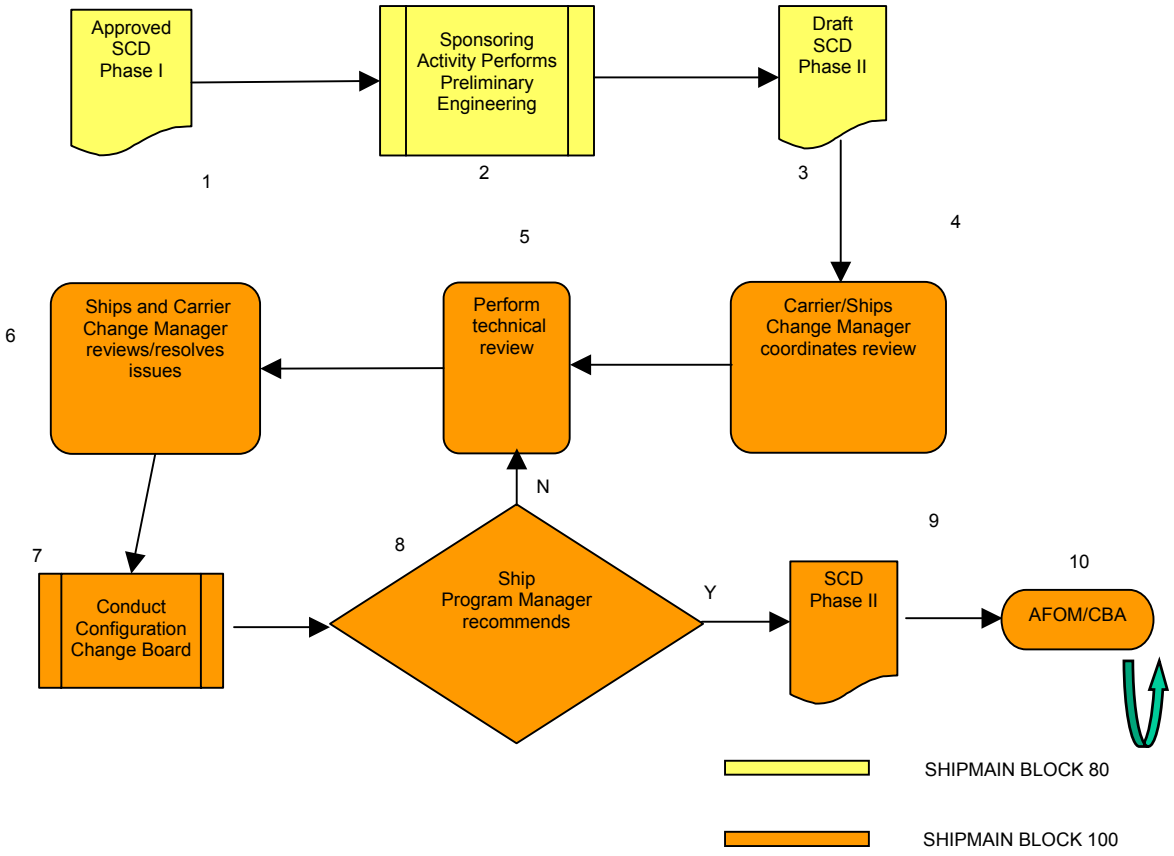
TECHNICAL ASSESSMENT FLOWCHART



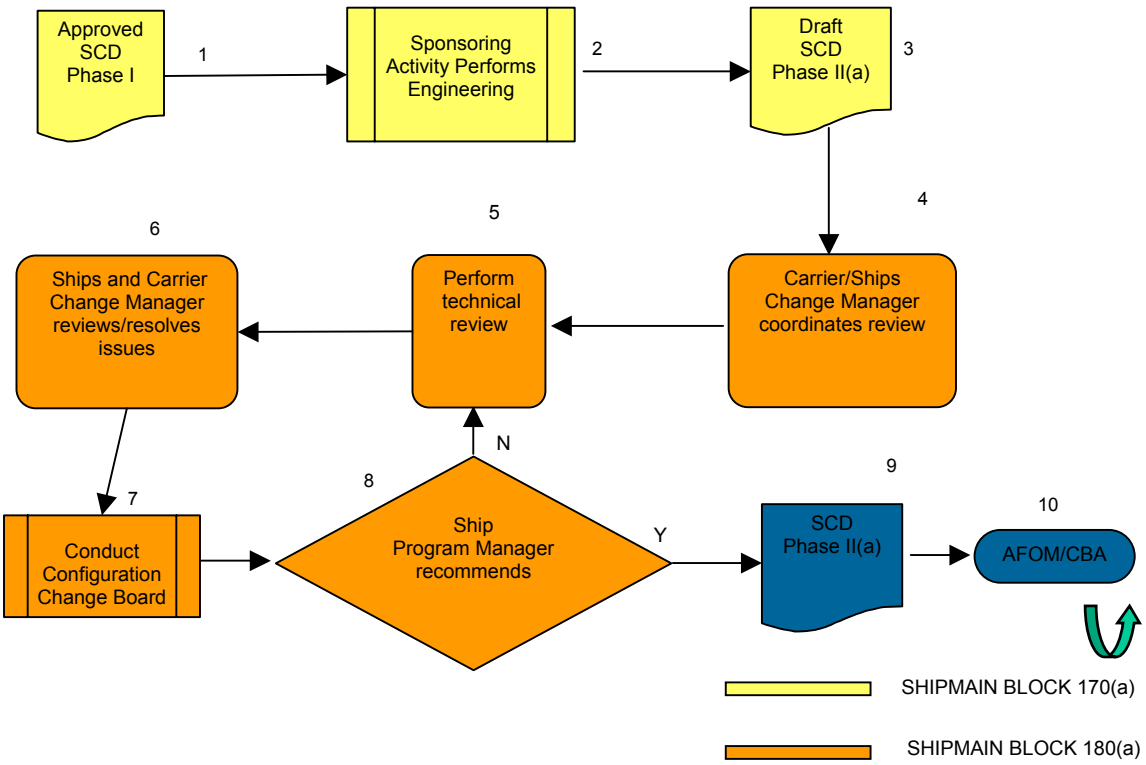
Technical Assessment Phase I

TECHNICAL ASSESSMENT FLOWCHART



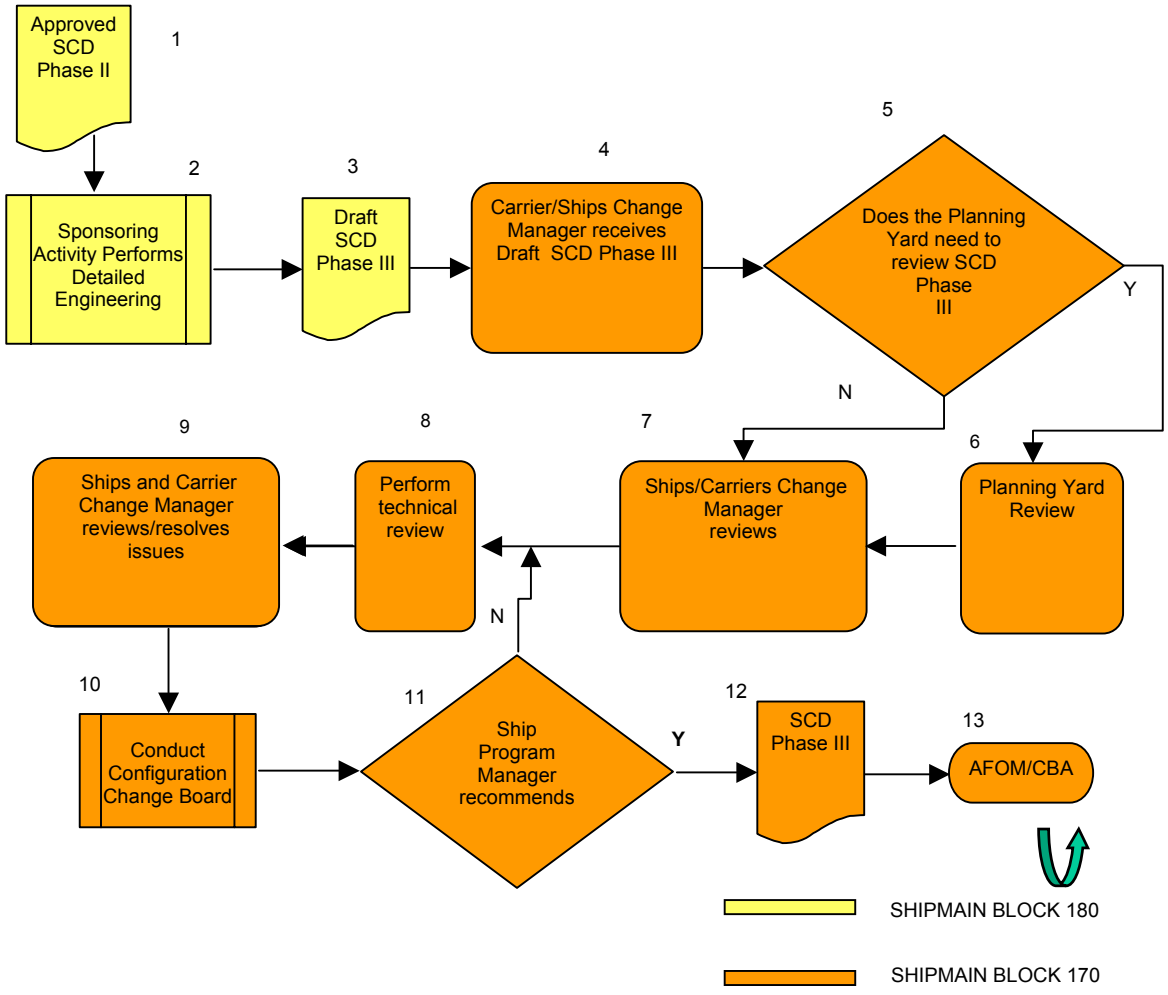
Technical Assessment Phase II

TECHNICAL ASSESSMENT FLOWCHART



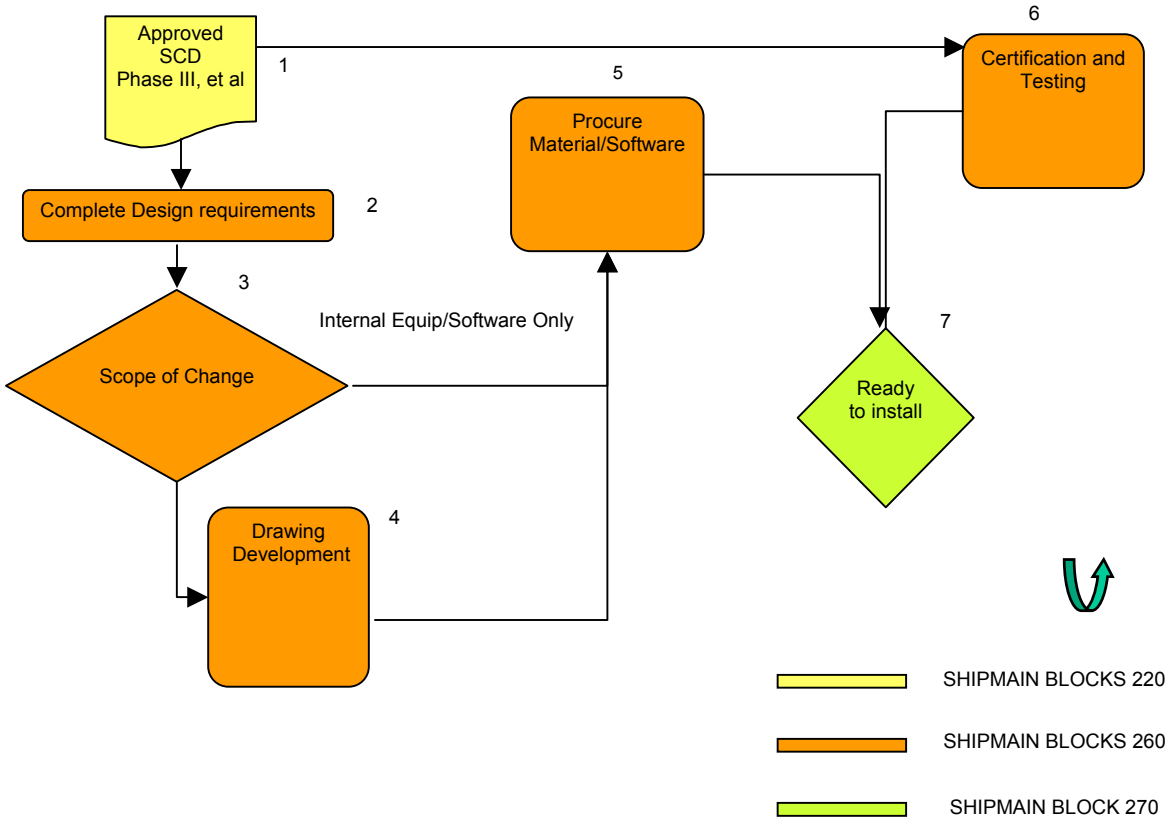
Technical Assessment Phase II(a)

TECHNICAL ASSESSMENT FLOWCHART



Technical Assessment Phase III

TECHNICAL ASSESSMENT FLOWCHART



Technical Implementation Phase IV

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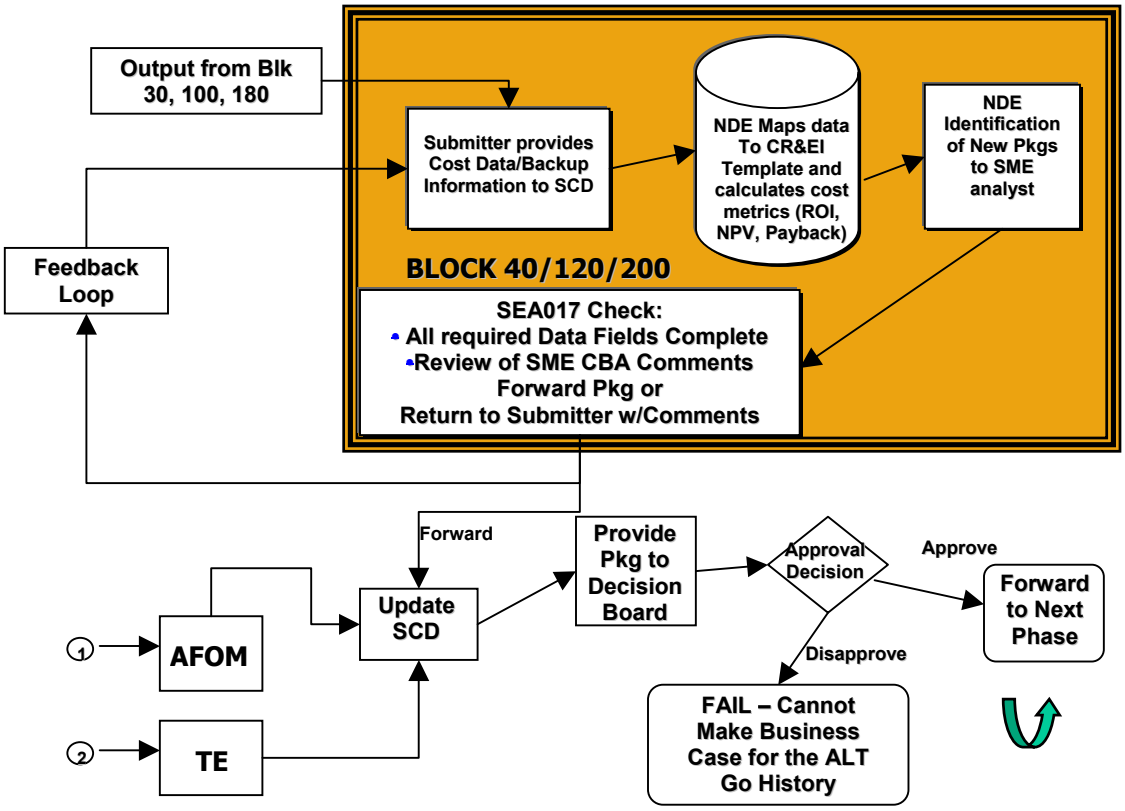
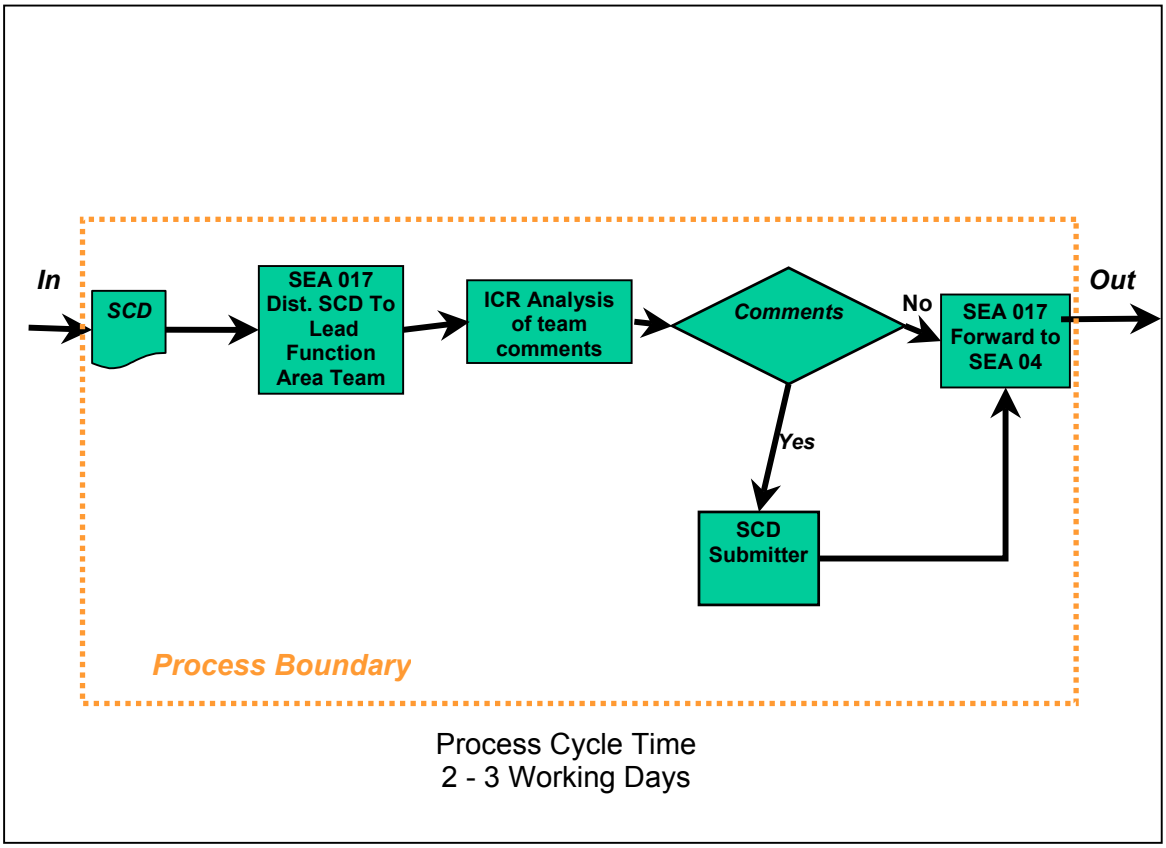
COST BENEFIT ANALYSIS FLOWCHART



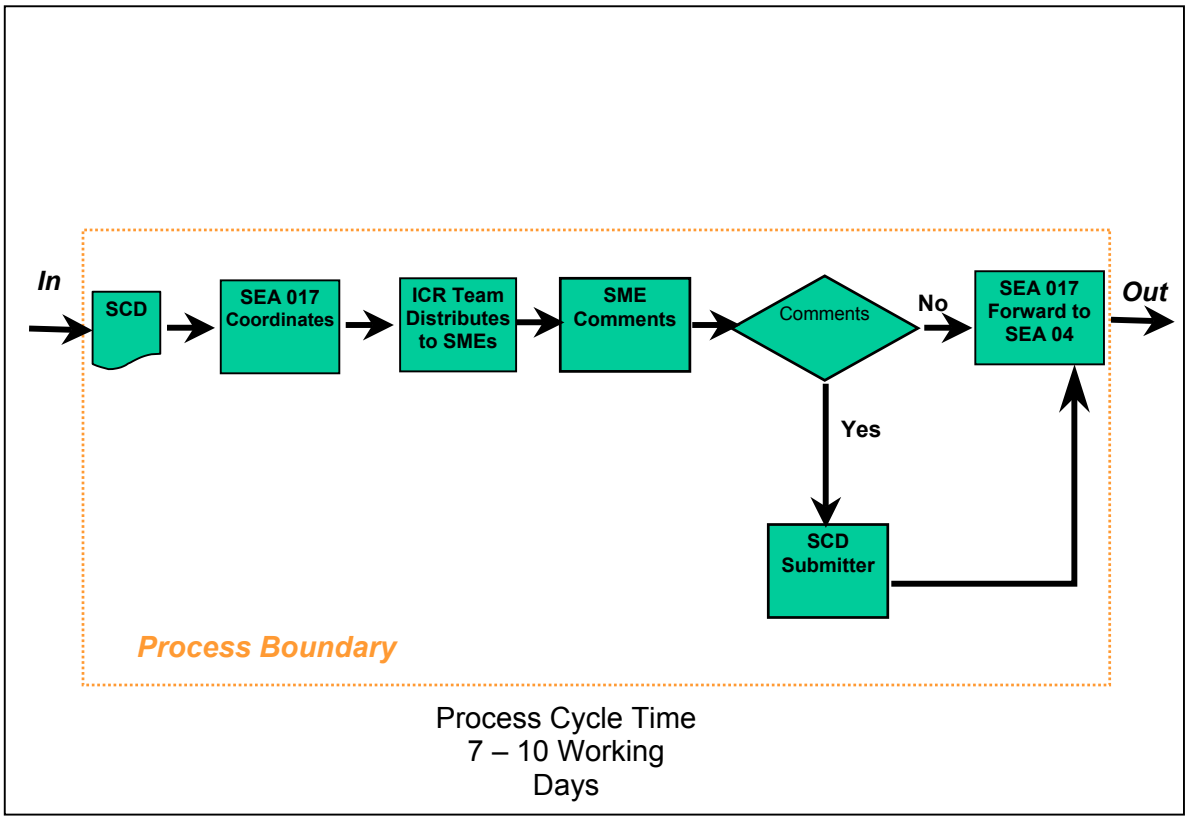
CBA PROCESS FLOW, BLKS 40/120/200

COST BENEFIT ANALYSIS FLOWCHART



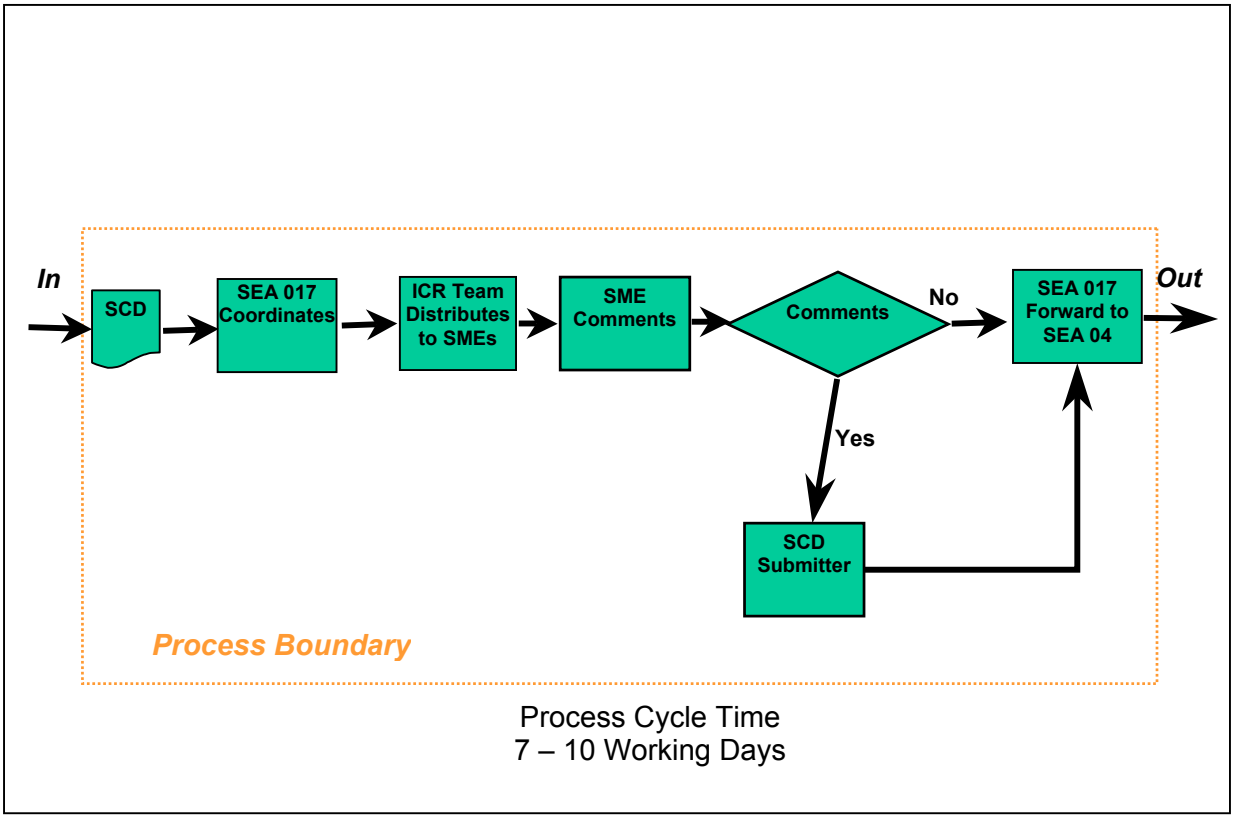
COST BENEFIT ANALYSIS (CBA)
BOX #40 - LEVEL 3

COST BENEFIT ANALYSIS FLOWCHART



UPDATE COST BENEFIT ANALYSIS (CBA)
BOX #120 - LEVEL 3

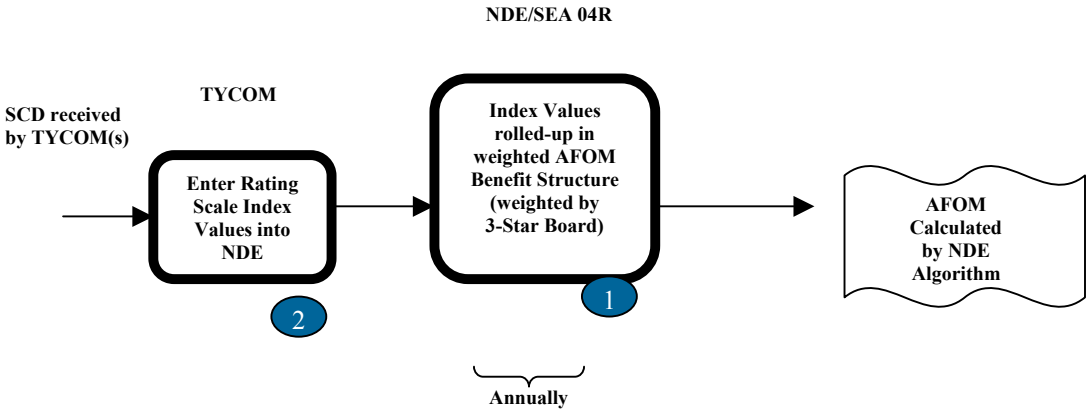
COST BENEFIT ANALYSIS FLOWCHART



UPDATE COST BENEFIT ANALYSIS (CBA)
BOX #200 - LEVEL 3

JFMM ACN 02-04
SURFACE SHIP/AIRCRAFT CARRIER MODERNIZATION PROGRAM (SHIPMAIN)

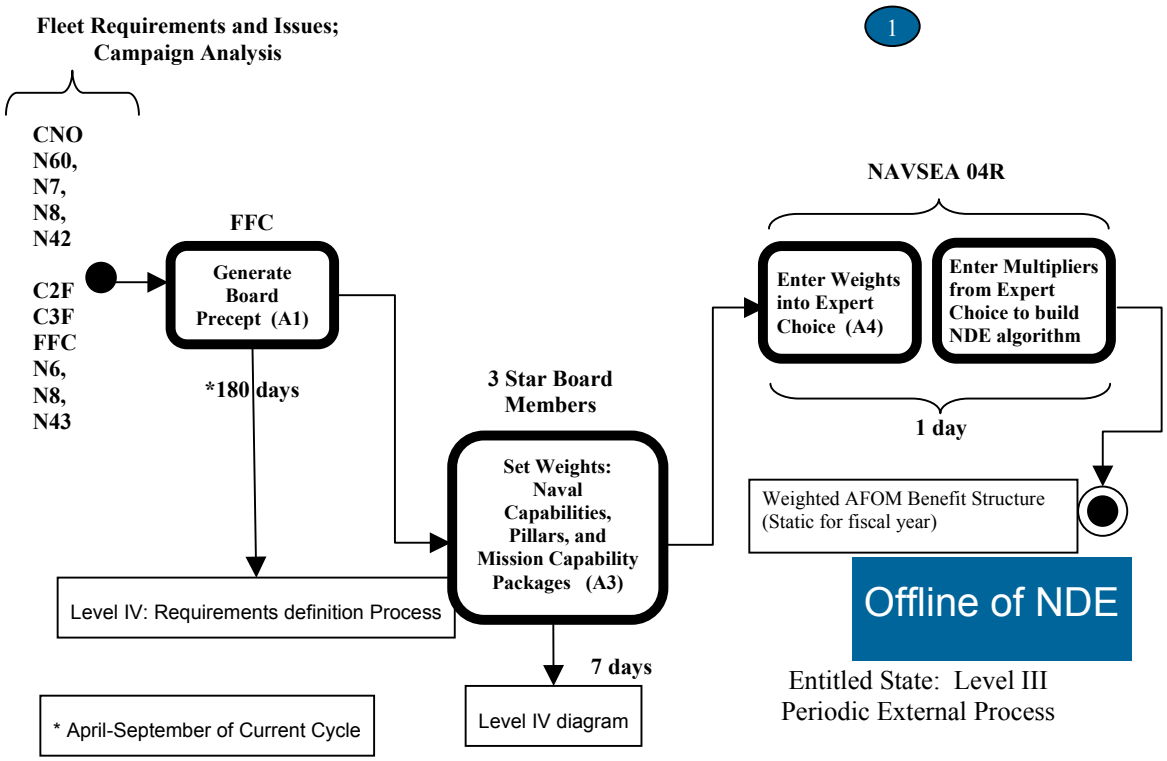
ALTERATION FIGURE OF MERIT FLOWCHART



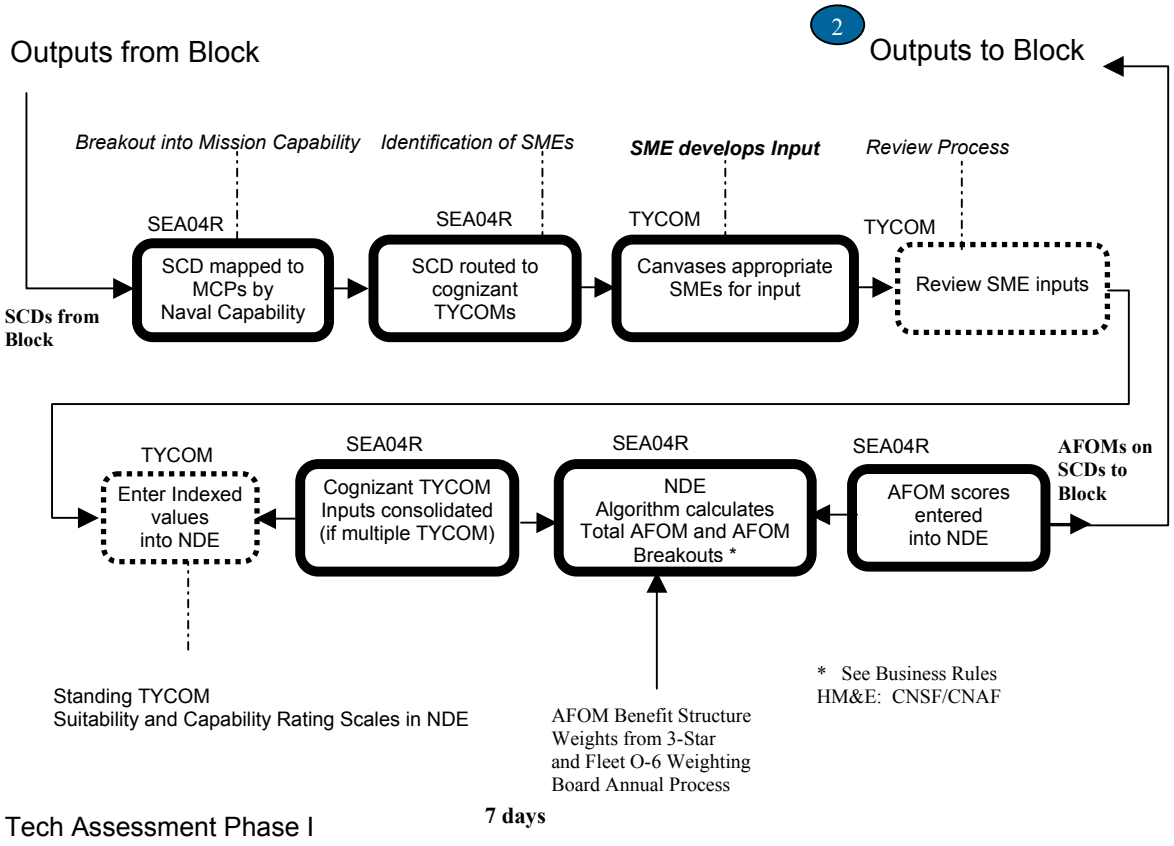
CONTINUOUS SCDs X TYCOM RATINGS X NAVY PRIORITIES (WEIGHTS)=AFOM VALUE

AFOM PROCESS (INITIAL AND UPDATE)

ALTERATION FIGURE OF MERIT FLOWCHART

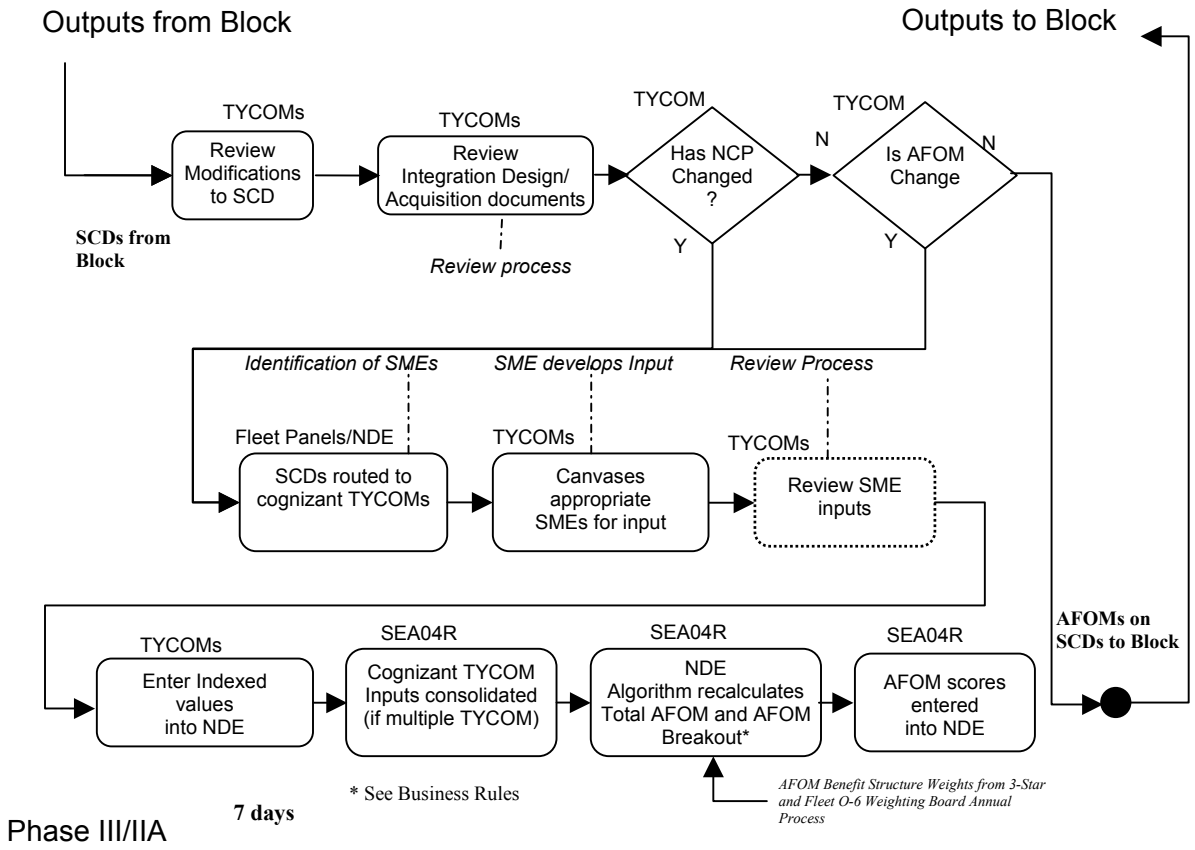


ALTERATION FIGURE OF MERIT FLOWCHART

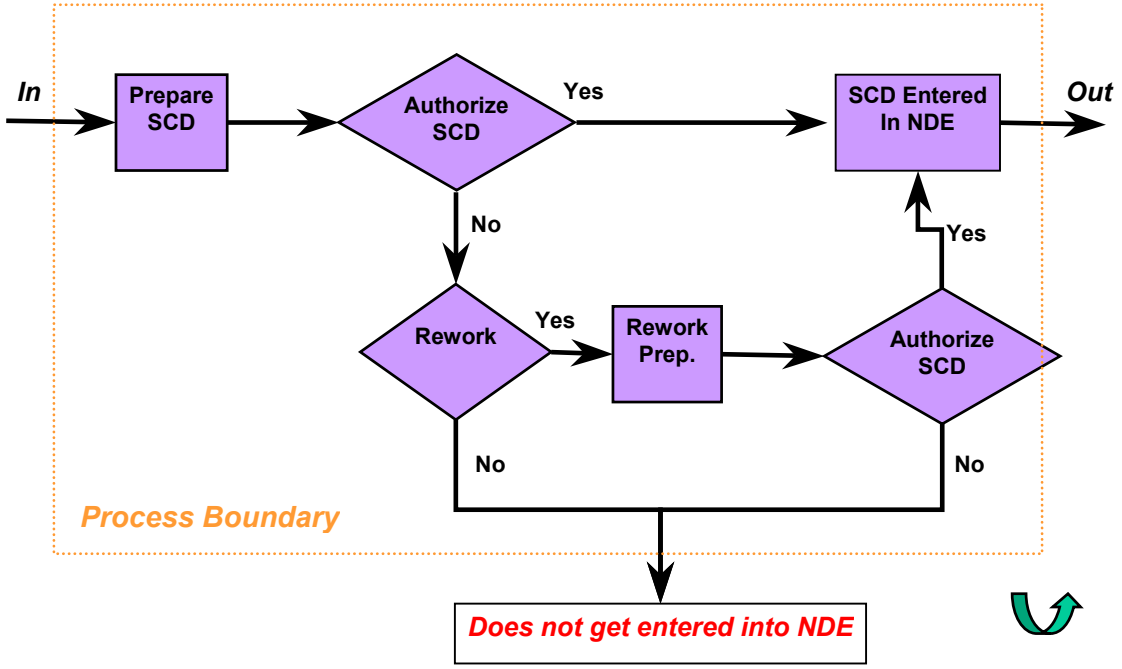


PROCESS FLOW (LEVEL III)
- CALCULATE INITIAL AFOM

ALTERATION FIGURE OF MERIT FLOWCHART



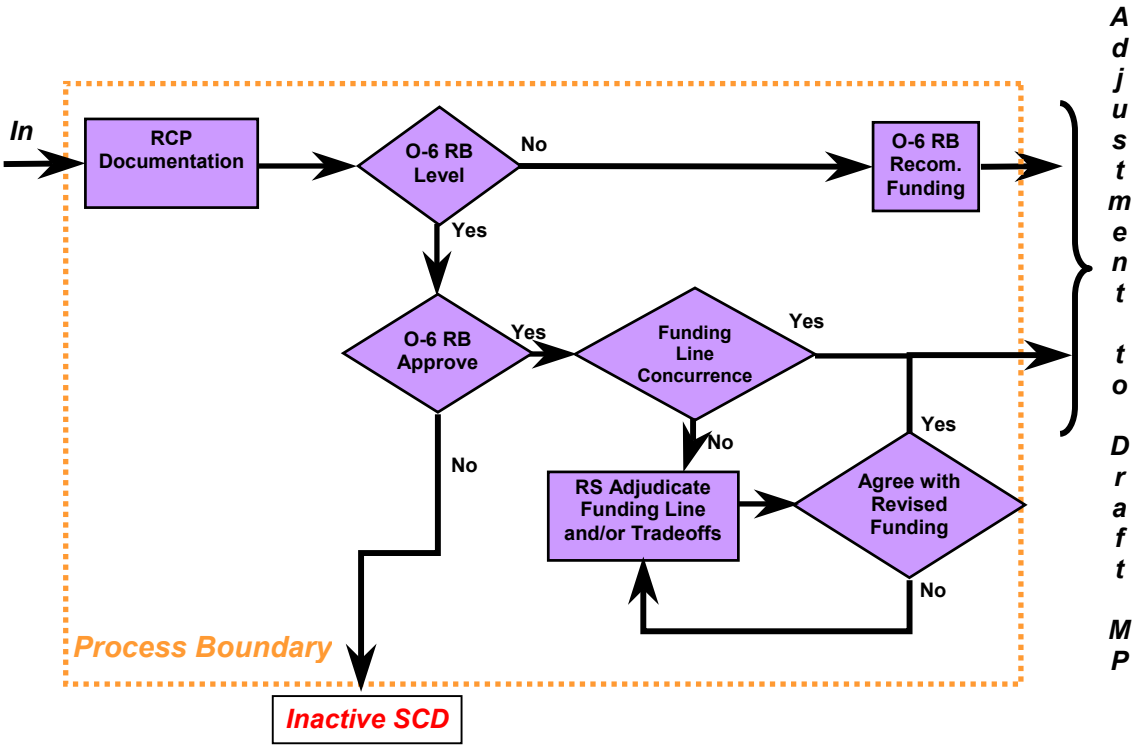
VOTING DATABASE FLOWCHART



CREATE SHIP CHANGE DOCUMENT (SCD)
BOX #10 - LEVEL 3

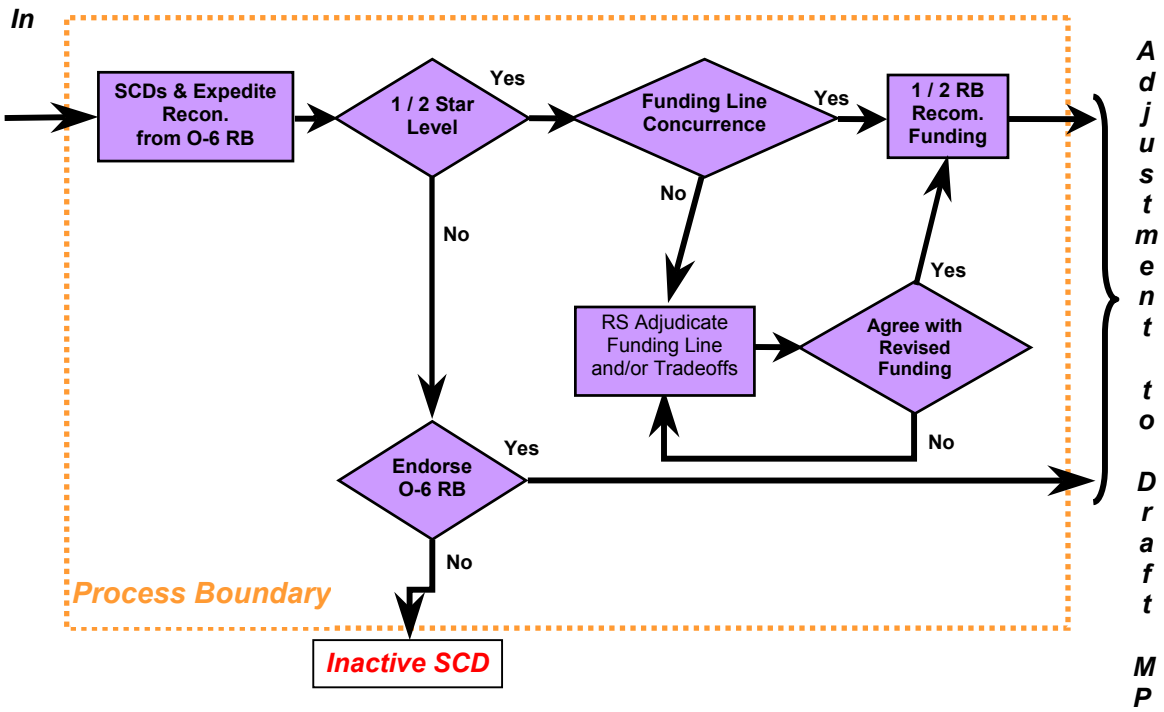
PROCESS FLOW (LEVEL III)
BLOCK - 2ND UPDATE AFOM

VOTING DATABASE FLOWCHART



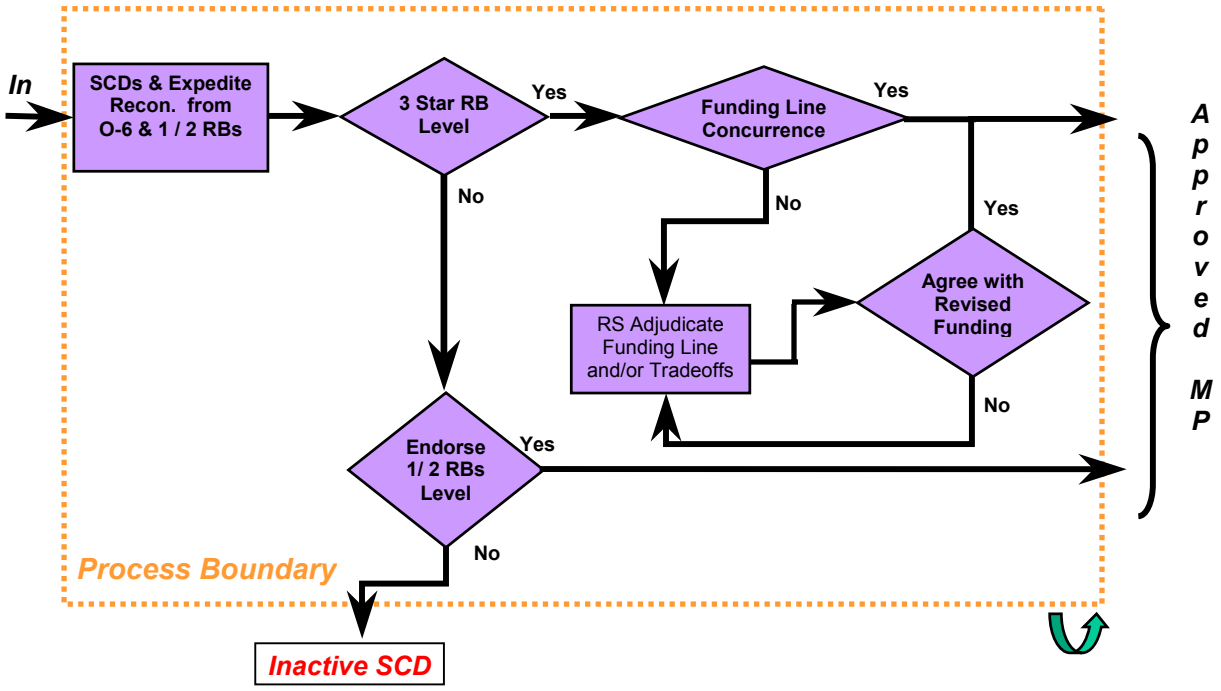
DECISION POINT 1 - O6 REVIEW BOARD
AUTHORIZE FUNDING FOR PREL. ENGINEERING
(BOX #60 - LEVEL 3)

VOTING DATABASE FLOWCHART



DECISION POINT 1 - 1/2 STAR REVIEW BOARD
AUTHORIZE FUNDING FOR PREL. ENGINEERING
(BOX #60 - LEVEL 3)

VOTING DATABASE FLOWCHART



DECISION POINT 1 - 3 STAR REVIEW BOARD
AUTHORIZE FUNDING FOR PREL. ENGINEERING
(BOX #60 - LEVEL 3)

SHIP MODERNIZATION MILESTONES;
AIRCRAFT CARRIER MODERNIZATION MILESTONES

SHIP MODERNIZATION ENTITLED PROCESS MILESTONES			
Milestone	**Responsible Activity**	**CFT 4 Entitled Process Milestones**	
		Entitlement	**Critical**
SCD (Ship Charge Document) Submitted	SYSCOMs/PEOs/OPNAV/FLEET	Varies	
Submit Initial Recommended Change Package (RCP)	SYSCOM/PEO	Varies	
Auth. Fund Preliminary Engineering Decision Point 1	OPNAV/FLEET	Varies	
Auth. Fund Design and Development Decision Point 2	OPNAV/FLEET	Varies	
Establish CNO/CM Availability Schedule	TYCOM	A-24	
Fund Procurement and Installation Decision Point 3	OPNAV/FLEET	Varies	
Identification of Initial List of LLTM	PARM/Planning Yard	A-22	
Provide Funding for LLTM (HCPM/ICP)	PARM/SPM	A-20	
Initiate procurement of HCMP LLTM	PARM/SPM	A-20	
Initiate Specification/Job Summary Development	Advance Planning Activity	A-20	
PY Submit Funding Request	Planning Yard	A-16	
Ship Change (SC) Design/Planning Funds provided	NAVSEA/TYCOM	A-14	
Interface Control Drawing (ICD) Delivered to SAR Developer/PY	PARM	A-14	
Provide Drawing list/schedule	Planning Yard	A-13	
Assign drawing development responsibility	PEO		
Modernization Workpackage to support Shipcheck (Locked)	SYSCOM/TYCOM	A-13	
Commence Monthly Planning Status Message	NSA	A-12	
Commence Specification Development	MSR/NSA or Executing Activity	A-12	
Issue SC Authorization Letter	SPM/NAVSEA/TYCOM	A-12	A-12
Establish Availability in NMD	Maintenance Team		
Task/Fund SID Development, including spec. development (NDE and SID Material Reconciliation)	SPM/NSA/AIT Manager	A-11	A-11
Shipchecks completed	Planning Yard	A-9	
Screen ICMP/TYCOM routines	TYCOM PC	A-9	
Issue/Deliver SIDs to NSA	Planning Yard	A-6	A-6
Provide funds for ordering ICP LLTM	SYSCOM/TYCOM	A-6	A-6
Request Availability Funding	NSA or Executing Activity	A-6	
Conduct Work Package Turnover	Planning Activity	A-5.5	
Issue Solicitation	NSA or Executing Activity	A-5	
Provide Availability Funding	NAVSEA/TYCOM	A-5	A-5
Identification of AIT Support/Schedule/Impact	AIT Manager	A-4.5	A-4.5
100% of D-level work package 2K's locked	Maintenance Team	A-2.5	
ILS Waivers Submitted	PARM/ SPM	A-5	
ILS Waivers Approved	TYCOM	A-5	
ILS Cert Plan (including Waiver) Approved	SPM/PARM/PM	A-4	A-4

SHIP MODERNIZATION ENTITLED PROCESS MILESTONES			
Milestone	**Responsible Activity**	**CFT 4 Entitled Process Milestones**	
		Entitlement	**Critical**
Provide funding for AIT install activity	AIT Sponsor	A-3	
Deliver Material (LLTM and Kitted Materials) to Executing Activity	Planning Yards/PARM	A-1	
Conduct Work Package Integration Review (WPIR)	TYCOM	A-1	
Start of Availability		A-0	A-0